12-1-2016

Curriculum Subcommittee Agenda, December 1, 2016

Utah State University

Curriculum Subcommittee Agenda
1 December 2016

A meeting of the Curriculum Subcommittee of the Educational Policies Committee will be held on 1 December 2016 at 2:00 pm in Old Main 136 (Champ Hall Conference Room).

1. *Approval of 3 November 2016 Minutes* (link)

2. *Program Proposals*
   Request from the Department of Sociology, Social Work and Anthropology in the College of Humanities and Social Sciences to offer a Sociology-Criminal Justice Major with emphases. (link)

   Request from the Department of Sociology, Social Work and Anthropology in the College of Humanities and Social Sciences to change the name from PhD in Sociology; doctoral specialization in States & Markets to PhD in Sociology; doctoral specialization in Social Inequality. (link)

   Request from the Department of Computer Science in the College of Engineering to offer a Master of Science in Data Science. (link)

   Request from the Department of Computer Science in the College of Engineering to offer a Computer Science Teaching Minor. (link)

   Request from the Department of Landscape Architecture and Environmental Planning in the College of Agriculture and Applied Sciences to offer a PhD in Landscape Architecture. (link)

   Request from the School of Applied Sciences, Technology and Education in the College of Agriculture and Applied Sciences to offer a Bachelor of Science in Technology Systems. (link)

3. *Semester Course Approval Reviews*
   https://usu.curriculog.com/

1. ADVS - 3610
2. ADVS - 6140
3. AG - BUSN - 2977
4. AG BU - ECN - 4010
5. APEC - 3310
6. APEC - 5000
7. APEC - 5010
8. APEC - 5015

9. APEC - 5020
10. AR - ART - 2810
11. AR - ARTH - 3360
12. AR - ARTH - 3640
13. AR - ARTH - 3755
14. AR - ARTH - 3810
15. AR - ARTH - 4725
16. AR - ARTH - 6755
17. AR - MUSC - 1225
18. AR - MUSC - 1484
19. AR - MUSC - 1485
20. AR - MUSC - 1495
21. AR - MUSC - 1510
22. AR - MUSC - 1515
23. AR - MUSC - 1525
24. AR - MUSC - 1535
25. AR - MUSC - 1545
26. AR - MUSC - 1585
27. AR - MUSC - 1635
28. AR - MUSC - 1705
29. AR - MUSC - 1715
30. AR - MUSC - 1725
31. AR - MUSC - 1735
32. AR - MUSC - 1745
33. AR - MUSC - 1815

34. AR - MUSC - 1825
35. AR - MUSC - 1835
36. AR - MUSC - 1845
37. AR - MUSC - 1855
38. AR - MUSC - 2225
39. AR - MUSC - 2415
40. AR - MUSC - 2494
41. AR - MUSC - 2495
42. AR - MUSC - 2505
43. AR - MUSC - 2525
44. AR - MUSC - 2535
45. AR - MUSC - 2545
46. AR - MUSC - 2595
47. AR - MUSC - 2645
48. AR - MUSC - 2755
49. AR - MUSC - 2765
50. AR - MUSC - 2775
51. AR - MUSC - 2785
52. AR - MUSC - 2795
53. AR - MUSC - 2855
54. AR - MUSC - 2865
55. AR - MUSC - 2875
56. AR - MUSC - 2885
57. AR - MUSC - 2895
58. AR - MUSC - 3210
59. AR - MUSC - 3400
60. AR - MUSC - 3445
61. AR - MUSC - 3450

62. AR - MUSC - 3480
63. AR - MUSC - 3550
64. AR - MUSC - 3670
65. AR - MUSC - 3710
66. AR - MUSC - 3720
67. AR - MUSC - 3730
68. AR - MUSC - 3740
69. AR - MUSC - 3750
70. AR - MUSC - 3810
71. AR - MUSC - 3820
72. AR - MUSC - 3830
73. AR - MUSC - 3840
74. AR - MUSC - 3860
75. AR - MUSC - 4510
76. AR - MUSC - 4520
77. AR - MUSC - 4530
78. AR - MUSC - 4540
79. AR - THEA - 3340
80. AR - THEA - 6340
81. AV - 2355
82. AV - 2365
83. AV - 2545
84. AV - 2665
85. AV - 2675
86. AV - 2685
87. AV - 3735
88. AV - 3835

89. BENG - 3670 - Transport Phenomena in Bio-Environmental Systems

90. BU - CEMG - 5700

91. BU - CEMI - 5700

92. BU - ECN - 3200

93. BU - ECN - 5300

94. BU - ECN - 5400

95. BU - ECN - 5600

96. BU - ECN - 5800

97. BU - ECN - 5900

98. BU - MGT - 6810

99. BU - MGT - 6820

100. CEAP - 5700

101. CELA - 5700

102. CEND - 5700

103. CS - 3430 - Scientific Computing with Python (DSC/QI)

104. ED - CEEL - 5700

105. ED - CEKA - 5700

106. ED - CEPY - 5700

107. ED - CESC - 5700

108. ED - COMD - 3120

109. ED - COMD - 5910

110. ED - EDUC - 6050

111. ED - ELED - 4062

112. ED - FCHD - 4980

113. ED - HEP - 6000

114. ED - HEP - 6350

115. ED - HEP - 6450

116. ED - HEP - 6550

117. ED - SPED - 5140

117. ED - SPED - 5140

118. ED - TEAL - 5500

119. EN - CEBE - 5700

120. EN - CECS - 5700

121. EN - CEEC - 5700

122. EN - CEMA - 5700

123. EN - CS - 2810

124. HS - ANTH - 3165

125. HS - CEEG - 5700

126. HS - CEJC - 5700

127. HS - CESS - 5700

128. HS - CJ - 1900

129. HS - CJ - 1902

130. HS - CJ - 1903

131. HS - CJ - 1911

132. HS - CJ - 1912

133. HS - CJ - 1913

134. HS - CJ - 1914

135. HS - CJ - 1915

136. HS - CJ - 1922

137. HS - CJ - 1923

138. HS - CJ - 1924

139. HS - CJ - 1925

140. HS - CJ - 1926

141. HS - ENGL - 6410

142. HS - ENGL - 6440

143. HS - ENGL - 6460

144. HS - ENGL - 6480

145. HS - ENGL - 6800

146. HS - ENGL - 6830

147. HS - ENGL - 6860

148. HS - ENGL - 7000

149. HS - ENGL - 7410

150. HS - ENGL - 7440

151. HS - ENGL - 7460

152. HS - ENGL - 7480

153. HS - ENGL - 7800

154. HS - ENGL - 7830

155. HS - ENGL - 7860

156. HS - SOC - 2800

157. HS - SOC - 3600

158. LAEP - 4110

159. LAEP - 4940

160. LAEP - 7800

161. NR - WATS - 6450

162. NR - WILD - 6740

163. PSC - 4810

164. SC - CECH - 5700

165. SC - CEGE - 5700

166. SC - CEPH - 5700

167. SC - CHEM - 5070

168. SC - MATH - 1051

169. SC - PHYS - 1010

170. UN - HONR - 4900

College of Agriculture and Applied Sciences
ADVS = 2
APEC = 7
ASTE = 9
LAEP = 4
NDFS = 1
PSC = 1

Caine College of the Arts
ART = 7
MUSC = 62
THEA = 2

Jon M. Huntsman School of Business
ACCT =
BUS =
ECN = 6
MGT = 3
MIS = 1

Emma Eccles Jones College of Education and Human Services
COMD = 2
EDUC = 1
FCHD = 1
KHS = 5
ITLS =
NURS =
PSY = 1
SPER = 1
TEAL = 4

College of Engineering
BENG = 2
CEE =
CS = 3
ECE = 1
EED =
MAE = 1

College of Humanities and Social Sciences
ENGL = 16
HIST =
JCOM = 1
LPCS =
POLS =
SSWA = 17

S.J. & Jessie E. Quinney College of Natural Resources
ENVS =
WATS = 1
WILD = 1

College of Science
BIOL =
CHEM = 2
GEOL = 1
MATH = 1
PHYS = 2

USU = 1

4. ***Other Business***
   Curriculog updates – Limiting the number of characters for the description and justification. Reducing clicks and increasing clarity. Compiling a list of updates/changes that need to be made by Digital Architecture.

CURRICULUM SUBCOMMITTEE MINUTES
3 November 2016

A meeting of the Curriculum Subcommittee of the Educational Policies Committee was held on 3 November 2016 at 2:00 pm in Old Main 136 (Champ Hall Conference Room).

Present: Vijay Kannan, Chair, Jon M. Huntsman School of Business
Brian Warnick, College of Agriculture and Applied Sciences
Dennis Dolny for Scott Hunsaker, Emma Eccles Jones College of Education and Human Services
Michele Hillard, Secretary
Cara Allen, Graduate Council
Gregory Podgorski for Richard Mueller, College of Science
Matt Sanders, College of Humanities and Social Sciences
Nancy Mesner for Claudia Radel, S.J. & Jessie E. Quinney College of Natural Resources
Clint Pumphrey, Libraries
Dean Adams, College of Engineering
Scott Henrie, USU-Eastern
Barbara Williams, Catalog Editor
Ryan Bentall, USUSA Executive Vice President
Nicholas Morrison, Caine College of the Arts

Absent: Larry Smith, Chair, EPC
Scott Bates, Chair, Academic Standards
Ty Aller, Graduate Studies Senator
Janet Anderson, Office of the Provost
Jessica Hansen, Academic and Instructional Services
Heidi Kesler, Registrar's Office
Fran Hopkin, Registrar's Office
Nathan Straight, Regional Campuses

Visitors: Erin Brewer, Project Coordinator, Climate Adaptation Sciences
Nancy Huntly, Director, Ecology Center
Beth Foley, Dean, Emma Eccles Jones College of Education and Human Services
Julie Gast, Faculty, Kinesiology and Health Science
Ron Munger, Director, Center for Epidemiologic Studies

1. ***Approval of 6 October 2016 Minutes***
   Motion to approve minutes made by Dean Adams. Seconded by Dennis Dolny. Minutes approved.

2. ***Program Proposals***
   Request from the Departments of Applied Economics, Plants, Soils and Climate, Biology, Civil and Environmental Engineering, Environment and Society, Mathematics and Statistics, Sociology, Social Work and Anthropology, Wildland Resources and Watershed Sciences in the Colleges of Agriculture and Applied Sciences, Science, Engineering, Natural Resources, and Humanities and Social Sciences to create a Climate Adaptation Science specialization within eleven Master of Science and nine PhD degrees.
   Motion to approve proposal made by Nick Morrison. Seconded by Nancy Mesner. Proposal approved.

Request from the Departments of Nutrition, Dietetics and Food Science, Kinesiology and Health Science, Animal, Dairy and Veterinary Sciences and Mathematics and Statistics in the Colleges of Agriculture and Applied Sciences, Education and Human Services and Science to offer a Master of Public Health.
Motion to approve proposal made by Brian Warnick. Seconded by Cara Allen. Proposal approved.

Request from the Department of Nursing and Health Professions in the Emma Eccles Jones College of Education and Human Services to offer a Bachelor of Science in Nursing.
Motion to approve proposal made by Nick Morrison. Seconded by Dean Adams. Proposal approved.

Request from the Department of English in the College of Humanities and Social Sciences to change the name of the PhD in Theory and Practice of Professional Communication to Technical Communication and Rhetoric.
Motion to approve proposal made by Nick Morrison. Seconded by Dennis Dolny. Proposal approved.

Request from the Department of Environment and Society in the S.J. & Jessie E. Quinney College of Natural Resources to make changes in the Geography Bachelor of Science program.
Motion to approve proposal made by Dennis Dolny. Seconded by Nick Morrison. Proposal approved.

3. ***Semester Course Approval Reviews***

College of Agriculture and Applied Sciences
Motion to approve the business of the College of Agriculture and Applied Sciences made by Brian Warnick. Seconded by Nancy Mesner. Business approved.

ADVS = 6 (ADVS 3400 – should be "specialists" in course description – spell out equine assisted activities and therapy)
APEC = (ADVS 3170 - should be techniques in transcript title)
ASTE = 1
LAEP =
NDFS = 3 (NDFS 6400 & 6830 – Prerequisites need to be clarified as being based on admission to corresponding programs)
PSC = 1

Caine College of the Arts
Motion to approve the business of the Caine College of the Arts made by Nick Morrison. Seconded by Dean Adams. Business approved.

ART = 1
MUSC = 2
THEA = 1

Jon M. Huntsman School of Business
Motion to approve the business of the Jon M. Huntsman School of Business made by Nick Morrison. Seconded by Matt Sanders. Business approved.
ACCT = 1
BUS = 25
ECN = 6
MGT = 33
MIS = 7

Emma Eccles Jones College of Education and Human Services
Motion to approve the business of the Emma Eccles Jones College of Education and Human Services made by Dennis Dolny. Seconded by Nancy Mesner. Business approved.

COMD = 1
EDUC =
FCHD =
KHS = 4
ITLS =
NURS = 15 (NURS 2230 – Missing title in transcript field)
PSY =
SPER =
TEAL =

College of Engineering
Motion to approve the business of the College of Engineering made by Dean Adams. Seconded by Nick Morrison. Business approved.

BENG =
CEE = 4 (CEE 6140 – Prerequisites need to go in prerequisites field, same with cross list)
CS =
ECE =
EED =
MAE =

College of Humanities and Social Sciences
Motion to approve the business of the College of Humanities and Social Sciences made by Nancy Mesner. Seconded by Brian Warnick. Business approved.

ENGL =
HIST = 4 (HIST 4540 – should be "in a global context' in description)
JCOM =
LPCS = 6
POLS =
SSWA = 1 (SOC 3610 – should be "to" not "ot" in description)

S.J. & Jessie E. Quinney College of Natural Resources
Motion to approve the business of the S.J. & Jessie E. Quinney College of Natural Resources made by Nancy Mesner. Seconded by Nick Morrison. Business approved.

ENVS =
WATS =
WILD = 2 (WILD 4580/6580 title should be BASE R – not Baser)

College of Science
BIOL =
CHEM =

GEOL =
MATH =
PHYS =

USU =

4. ***Other Business***

A significant number of new courses will be coming through from the Department of Music.

Any Curriculog updates/suggestions/questions need to be turned in to Michele Hillard by Tuesday, November 8. These issues will be brought forward in a meeting with Vijay Kannan, Larry Smith, Jessica Hansen, Barbara Williams and Michele Hillard. Updates will be presented at the December meeting.

Adjourn: 2:42 pm

Institution Submitting Proposal: *Utah State University*

College, School or Division in Which Program/Administrative Unit Will Be Located: *College of Humanities and Social Sciences*

Department(s) or Area(s) in Which Program/Administrative Unit Will Be Located: *Sociology, Social Work, and Anthropology*

Program/Administrative Unit Title: *Sociology, Social Work, and Anthropology*

Recommended Classification of Instructional Programs (CIP) Code: *45.1101*

Certificate, and/or Degree(s) to Be Awarded: *Sociology Major-Criminal Justice Emphasis*

Proposed Beginning Date: *Fall Semester 2017*

Institutional Signatures (*as appropriate*):

Derrik Tollefson, Department Chair

DocuSigned by:
Joseph Ward
A75A27D3AA88454...
Joseph Ward, Dean

Date: 11/7/16

Utah System of Higher Education
New Academic Program Proposal
Cover/Signature Page - Abbreviated Template

Institution Submitting Request:	**Utah State University**
Proposed or Current Program Title:	**Sociology-Criminal Justice Major**
Sponsoring School, College, or Division:	**College of Humanities and Social Sciences**
Sponsoring Academic Department(s) or Unit(s):	**Department of Sociology, Social Work, and Anthropology**
Classification of Instructional Program Code[1] :	**45.1101**
Min/Max Credit Hours Required of Full Program:	**42 / 42**
Proposed Beginning Term[2]:	**Fall 2017**
Institutional Board of Trustees' Approval Date:	

☐	Certificate of Proficiency ☐ Entry-level CTE CP ☐ Mid-level CP
☐	Certificate of Completion
☐	Minor
☐	Graduate Certificate
☐	K-12 Endorsement Program
☒	NEW Emphasis for Regent-Approved Program *Current Program BOR Approval Date:* *Proposed Emphasis Title* Sociology Major, Criminal Justice Emphasis *Credit Hours for NEW Emphasis Only:* **24 / 24** Propose a NEW Emphasis
☐	Out of Service Area Delivery Program

Chief Academic Officer (or Designee) Signature:
I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

_____ Date:

☐ I understand that checking this box constitutes my legal signature.

[1] For CIP code classifications, please see [illegible]

[2] "Proposed Beginning Term" refers to first term after Regent approval that students may declare this program.

Utah System of Higher Education
Program Description - Abbreviated Template

Section I: The Request

Utah State University requests approval to offer the following Degree: Sociology-Criminal Justice Major with emphases effective Fall 2017. This program was approved by the institutional Board of Trustees on .

Section II: Program Proposal/Needs Assessment

Program Description/Rationale

Present a brief program description. Describe the institutional procedures used to arrive at a decision to offer the program. Briefly indicate why such a program should be initiated. State how the institution and the USHE benefit by offering the proposed program. Provide evidence of student interest and demand that supports potential program enrollment.

The criminal justice and criminology courses in SSWA draw heavy student interest. The number of CJ minors has grown in just the past two years from 86 students in fall 2014 to 131 in spring 2015. Over that same time period, criminal justice and crime-related sociology courses have provided an average of 1706.25 credit hours per semester. Currently students do not have an option of getting a bachelor's degree major in this area. A sociology/criminal justice undergraduate major would draw a significant number of new majors and increase student enrollments in our department, both on the Logan campus an on regional campuses. This could be achieved with a limited investment of new resources by tapping the synergy between our Criminal Justice A.S. program at USU Eastern, the Sociology program in Logan through IVC course delivery, and development of additional online criminal justice and criminology courses. This program would be beneficial to students (providing a popular major track option with significant employment opportunities upon graduation), the department (providing robust student enrollments), and the state of Utah (providing more socially aware and educated potential law enforcement officers).

Labor Market Demand

Provide local, state, and/or national labor market data that speak to the need for this program. Occupational demand, wage, and number of annual openings information may be found at sources such as Utah DWS Occupation Information Data Viewer (jobs.utah.gov/jsp/wi/utalmis/gotoOccinfo.do) and the Occupation Outlook Handbook (www.bls.gov/oco).

According to the Utah DWS Occupation Information Data Viewer, job prospects in law enforcement in the state have a four-star rating out of a possible five. The average inexperienced patrol officer in Utah starts at $17.30 an hour and earns $35,980 annually, although this salary can be as high as $40,170 in the Wasatch Back area. There are currently 4,300 patrol officers in Utah, although that number is anticipated to increase by 240 in the next year based upon recent trends. The average inexperienced corrections officer makes $16.29 per hour, earning $33,890 annually. Currently, there are 2,052 corrections officers employed in the state of Utah and that number is expected to increase by 80 in the next twelve months based upon annual percent changes. While working as a probation officer only has a two-star rating, the average new community corrections officer earns $17.84 an hour and $37,110 a year. Finally, although it requires additional schooling beyond a bachelor's degree, working as a lawyer in Utah has a five-star rating out of five. On average, inexperienced lawyers earn $28.19 an hour and $58,630 annually, potentially earning as much as $68,730 in the Provo-Orem Metro area. Total annual openings are projected to be 180 in the next year based upon annual percent change.

Consistency with Institutional Mission/Impact on Other USHE Institutions

Explain how the program is consistent with the institution's Regents-approved mission, roles, and goals. Institutional mission and roles may be found at higheredutah.org/policies/policyr312/ . Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in higheredutah.org/policies/policyr315/ .

The current proposal is an excellent example of a program that aims to satisfy Utah State University's mission statement to be a premier land-grant university by fostering the principle that academics come first, by cultivating diversity of thought and culture, and by serving the public through learning, discovery, and engagement. Crime is a complex subject that is heavily tied to issues of class, race, and gender, and our societal response to crime should be nuanced and guided by evidence-based practices. The aim of this degree emphasis is to foster a culture within local, state, and even federal criminal justice institutions

including policing, the courts, and corrections, that embraces a diversity of perspectives and evidence-based practices. Educating future criminal justice practitioners to not only effectively maintaining formal social control but to also be culturally aware is one of the most important ways that the Department of Sociology, Social Work, and Anthropology can serve the public.

The immediate benefits to our students would be twofold. It would not only be possible for majors to receive a bachelor's degree (making them eligible to work in federal law enforcement or go on to receive more eduction in the form of a master's or terminal professional degree like a juris doctorate), but they also have the option of earning credit towards that degree by enrolling in the Peace Officer Standards and Training (POST) program located in Price. At the time they graduate from Utah State University our students could have both a bachelor's degree and POST certification allowing them to begin working in law enforcement.

Finances

What costs or savings are anticipated in implementing the proposed program? If new funds are required, indicate expected sources of funds. Describe any budgetary impact on other programs or units within the institution.

USU-Eastern has re-directed existing resources to hire an additional criminal justice/sociology faculty member to support the proposed emphasis. Consequently, there is no anticipated financial impact associated with this proposal. No additional new resources are needed to implement the emphasis. Instructional support will be provided through existing instructional offerings and the development of one new internship course, which will fall within the load of the new USU Eastern faculty member. The technology, infrastructure, and structure to deliver the program statewide are in place. The new course will be developed as part of instructional capacity / load of current faculty.

Section III: Curriculum

Program Curriculum

List all courses, including new courses, to be offered in the proposed program by prefix, number, title, and credit hours (or credit equivalences). Indicate new courses with an X in the appropriate columns. The total number of credit hours should reflect the number of credits required to receive the award. ***For NEW Emphases, skip to emphases tables below.***
For variable credits, please enter the minimum value in the table below for credit hours. To explain variable credit in detail as well as any additional information, use the narrative box below.

Can students complete this degree without emphases? X *Yes or* *No*

		Course Number	NEW Course	Course Title	Credit Hours
		General Education Courses (list specific courses if recommended for this program on Degree Map)			
				General Education Credit Hour Sub-Total	27
		Required Courses			
+	-	SOC 1010		Introduction to Sociology	3
+	-	SOC 3110		Methods of Social Research	3
+	-	SOC 3120		Social Statistics I	3
				Required Course Credit Hour Sub-Total	9
		Elective Courses			
+	-	CJ 1340		Criminal Investigations	3
+	-	CJ 1350		Introduction to Forensic Science	3
+	-	CJ 1355		Crime Scene Processing	3
+	-	CJ 2110		Security	3
+	-	CJ 2330		Juvenile Justice	3
+	-	CJ 2340		Survey of Criminal Procedure	3
+	-	CJ 2350		Laws of Evidence	3
+	-	CJ 2360		Juvenile Law and Procedure	3
+	-	CJ 2370		Child Abuse and Neglect	3
+	-	CJ 2860		Field Experience	3
+	-	SOC 3410		Juvenile Delinquency	3
+	-	SOC 3430		Social Deviance	3
+	-	SOC 3520		Sociology Mental Illness	3
+	-	SOC 3600		Urban Sociology	3
+	-	SOC 4410		Race and Crime	3
+	-	SW 3350		Child Welfare	3
+	-	SW 3650		Mental Health	3
+	-	SW 4900		Special Topics: Substance Abuse	3
+	-	SW 4900		Special Topics: Gender-based Violence	3
+	-	SW 4900		Special Topics: Forensic Child Welfare	3
				Elective Credit Hour Sub-Total	9

		Course Number	NEW Course	Course Title	Credit Hours
				Core Curriculum Credit Hour Sub-Total	45

	Course Number	NEW Course	Course Title	Credit Hours
	Name of Emphasis:		Sociology Major, Criminal Justice Emphasis	
+ -	CJ 1010		Introduction to Criminal Justice	3
+ -	CJ 1300		Introduction to Corrections	3
+ -	CJ 1330		Criminal Law	3
+ -	CJ 1390		Introduction to Policing	3
+ -	SOC 3420		Criminology	3
+ -	SOC 4420		Criminal Law & Justice	3
+ -	SOC 4xxx	X	Applied Criminal Justice Internship	6
			Emphasis Credit Hour Sub-Total	24
			Total Number of Credits to Complete Program	69
	Remove this emphasis			

Propose a NEW Emphasis to an existing Regent approved program

Program Curriculum Narrative

Describe any variable credits. You may also include additional curriculum information, as needed.

The proposed criminal justice emphasis within the sociology major follows the same general program theory as the existing sociology major. The degree requires a minimum of 42 major credit hours, as well as an additional 27 core curriculum credits that satisfy university breadth and depth requirements (totaling 69 core curriculum credit hours). Within the 42 major credit hours, 33 are required courses and the remaining nine are electives. The 33 required credits include 3 courses (9 credits) all sociology majors must take and 24 credit hours of core emphasis coursework, which include 6 internship hours. Of the 33 required credits 15 are drawn from existing sociology course offerings while 12 come from existing criminal justice courses.

Similar to the existing sociology major, the required 15 sociology credits are spread out over key courses that include Introduction to Sociology, Research Methods, Social Statistics, and Social Theory (in this case, Criminology as it is a crime-centric theory course). The final required sociology course will be a 4000-level class focused on criminal law and justice. This course and the 12 required criminal justice credits (Introduction to Criminal Justice and topic-specific introductory courses on corrections, criminal law, and policing) expose students to the major elements of the criminal justice system. The criminal justice courses, 4000-level sociology criminal law and justice and criminology courses, and internship course represent the core of the criminal justice emphasis within the sociology major.

In addition to the 24 core emphasis credit hours, students must take nine elective credits. These electives are organized into three groups. The first includes any of the criminal justice elective course offerings; the second includes sociology courses examining delinquency, deviance, mental illness, race, and urban settings; and the third includes social work courses that have been evaluated as relevant to criminal justice as they cover topics specific to dealing with key at-risk populations: children (child abuse and neglect), the mentally ill, substance abusers, and gender-based violence victims and offenders. Students pursuing the criminal justice emphasis may choose any combination of nine elective credits to satisfy degree requirements.

Students enroll in the Applied Criminal Justice Internship (6 credit hours total, 3 per semester) during the final year. These internships provide students with the opportunity to apply what they learn in the classroom in a "real world" criminal justice practice setting. One of the available internships is the Peace Office Standards and Training (POST) academy affiliated with the

USU-Eastern campus in Price. Students can earn 6 credit hours while becoming qualified to work as peace officers after graduation.

Degree Map

Degree maps pertain to undergraduate programs ONLY. Provide a degree map for proposed program. Degree Maps were approved by the State Board of Regents on July 17, 2014 as a degree completion measure. Degree maps or graduation plans are a suggested semester-by-semester class schedule that includes prefix, number, title, and semester hours. For more details see http://higheredutah.org/pdf/agendas/201407/TAB%20A%202014-7-18.pdf (Item #3).

Please cut-and-paste the degree map or manually enter the degree map in the table below

First Year Fall	Cr. Hr.	First Year Spring	Cr. Hr.
SOC 1010 (BSS)	3	CJ 1010 (BSS)	3
ENGL 1010 (CL1)	3	STAT 1040 (QL)	3
University Breadth General Ed Requirement	3	University Breadth General Ed Requirement	3
University Breadth General Ed Requirement	3	University Breadth General Ed Requirement	3
Elective Course	3	Elective Course	3
Total	15	**Total**	15
Second Year Fall	**Cr. Hr.**	**Second Year Spring**	**Cr. Hr.**
CJ 1300	3	CJ 1330	3
CJ 1390	3	University Depth General Ed Requirement	3
ENGL 2010 (CL2)	3	University Depth General Ed Requirement	3
University Breadth General Ed Requirement	3	Elective	3
Elective Course	3	Elective	3
Total	15	**Total**	15
Third Year Fall	**Cr. Hr.**	**Third Year Spring**	**Cr. Hr.**
SOC 3110 (CI)	3	SOC 3420	3
SOC 3120 (QI)	3	CJ Emphasis Elective	3
CJ Emphasis Elective	3	CJ Emphasis Elective	3
USU Minor or Elective	3	USU Minor or Elective	3
USU Minor or Elective	3	USU Minor or Elective	3
Total	15	**Total**	15
Fourth Year Fall	**Cr. Hr.**	**Fourth Year Spring**	**Cr. Hr.**
SOC 4420 (CI)	3	SOC 4XXX Internship	3
SOC 4XXX Internship	3	USU Minor or Elective	3
USU Minor or Elective	3	USU Minor or Elective	3
USU Minor or Elective	3	USU Minor or Elective	3
USU Minor or Elective	3	USU Minor or Elective	3
Total	15	**Total**	15

Institution Submitting Proposal: *Utah State University*

College, School or Division in Which Program/Administrative Unit Will Be Located: *College of Humanities and Social Sciences*

Department(s) or Area(s) in Which Program/Administrative Unit Will Be Located: *Department of Sociology, Social Work and Anthropology*

Program/Administrative Unit Title:*PhD in Sociology*

Recommended Classification of Instructional Programs (CIP) Code: *45 .1101*

Certificate, and/or Degree(s) to Be Awarded: *Change in name of one of three existing PhD program areas of specialization – from "States & Markets" to "Social Inequality"*

Proposed Beginning Date: *Fall semester, 2017*

Institutional Signatures (*as appropriate*):

Derrik Tollefson
Department Head, Sociology, Social Work and Anthropology

DocuSigned by:
Joe Ward
A75A27D3AA88454...

Joseph P. Ward
Dean, College of Humanities and Social Sciences

Mark McLellan
Vice President for Research and Dean of Graduate Studies

Date:

Utah System of Higher Education
Changes to Existing Academic Program Proposal
Cover/Signature Page - Abbreviated Template

Institution Submitting Request:	**Utah State University**			
	Current		*Proposed (if applicable)*	
Program Title:	**PhD in Sociology; doctoral specialization in States & Markets**		**PhD in Sociology; doctoral specialization in Social Inequality**	
Sponsoring School, College, or Division:	**College of Humanities and Social Sciences**			
Sponsoring Academic Department(s) or Unit(s):	**Department of Sociology, Social Work and Anthropology**			
Classification of Instruction Program Code[1]:	**45.1101**		**6 - Digit CIP**	
Min/Max Credit Hours for Full Program Required:	**48**	**/ 51**	**Min Cr Hr**	**/ Max Cr Hr**
Proposed Effective Term for Program Change[2]:	**Fall**	**2017**		
Institutional Board of Trustees' Approval Date:				

Award Type: Doctoral Degree

Program Change Type (check all that apply):

☒	Name Change of Existing Program
☐	Program Restructure with or without Consolidation
☐	Program Transfer to a new academic department or unit
☐	Program Suspension
☐	Program Discontinuation
☐	Reinstatement of Previously Suspended Program
☐	Out of Service Area Delivery Program

Chief Academic Officer (or Designee) Signature:
I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

Please type your first and last name _____ Date:

☐ I understand that checking this box constitutes my legal signature.

1 For CIP code classifications, please see http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55.
2 "Proposed Effective Term" refers to term when change to program is published. **For Suspensions and Discontinuations,** "effective term" refers to the term the program will suspend admissions.

Program Change Description - Abbreviated Template

Section I: The Request

Utah State University requests approval to change name from PhD in Sociology; doctoral specialization in States & Markets to PhD in Sociology; doctoral specialization in Social Inequality effective Fall 2017. This action was approved by the institutional Board of Trustees on .

Section II: Program Proposal

Program Change Description/Rationale

Present a brief program change description. Describe the institutional procedures used to arrive at a decision for the change. Briefly indicate why such a change should be initiated. State how the institution and the USHE benefit by the change.

The Graduate Program in Sociology at Utah State University proposes a change in the name of one of the three areas of specialization available as part of our doctoral degree. The current list of approved doctoral program specializations in the Sociology program includes three areas: (a) Demography; (b) Environment & Community; and (c) States & Markets. We propose to change the name of the third specialization from "States & Markets" to "Social Inequality." Members of the Sociology faculty have engaged in discussions about the potential to re-name this area of specialization for approximately the past year, and the proposed change was approved by the faculty in September, 2016.

The proposed re-naming of this specialization is intended to clear up what we have determined is considerable confusion on the part of potential graduate students as well as others (including potential employers of our students) regarding the specific content and focus of the curriculum and training associated with the specialty area. In addition, the proposed name change is intended to provide a better alignment with the curriculum we now offer and are prepared to offer, and with the expertise of Sociology faculty members whose teaching and research interests contribute to the specialty area. This request would not involve any changes to course offerings or other program requirements -- it would simply change the name of the doctoral specialization from "States & Markets" to "Social Inequality."

Implementation of the proposed change would help to clarify the structure and focus of the Sociology PhD program for potential applicants, and in the process help to enhance student recruitment efforts. In addition, designation of the area as "Social Inequality" will assist those who complete the Sociology PhD program with that specialization to more clearly represent their training and expertise to potential employers, thereby enhancing our students' ability to secure appropriate post-degree professional appointments.

Consistency with Institutional Mission/Institutional Impact

Explain how the action is consistent with the institution's Regent-approved mission, roles, and goals. Institutional mission and roles may be found at higheredutah.org/policies/policyr312/ . Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in higheredutah.org/policies/policyr315/ . Will faculty or staff structures be impacted by the proposed change?

Utah State University is one of the state's designated doctoral degree granting institutions, and the proposed change is consistent with that element of the institution's mission and with our efforts to provide a high-quality doctoral education to students enrolled in the Sociology PhD program.

The proposed name change for one of the three doctoral specializations in the USU Sociology graduate program would not alter any other aspects of the program's structure. The PhD program would continue to be offered only at the Logan campus. No faculty or staff changes would occur in conjunction with the proposed name change.

Finances

What costs or savings are anticipated from this change? If new funds are required to implement the change, indicate expected sources of funds. Describe any budgetary impact on other programs or units within the institution.

There would be no budgetary effects associated with the proposed name change for this specialty area in the Sociology PhD program.

Utah System of Higher Education
New Academic Program Proposal
Cover/Signature Page - Full Template

Institution Submitting Request:	Utah State University
Proposed Program Title:	Masters of Science in Data Science
Sponsoring School, College, or Division:	College of Engineering
Sponsoring Academic Department(s) or Unit(s):	Computer Science
Classification of Instructional Program Code[1] :	
Min/Max Credit Hours Required of Full Program:	Min Cr Hr / Max Cr Hr
Proposed Beginning Term[2]:	Fall 2017
Institutional Board of Trustees' Approval Date:	

Program Type (check all that apply):

☐ (AAS)	Associate of Applied Science Degree
☐ (AA)	Associate of Arts Degree
☐ (AS)	Associate of Science Degree
☐	Specialized Associate Degree (specify award type[3]:)
☐	Other (specify award type[3]:)
☐ (BA)	Bachelor of Arts Degree
☐ (BS)	Bachelor of Science Degree
☐	Specialized Bachelor Degree (specify award type[3]:)
☐	Other (specify award type[3]:)
☐ (MA)	Master of Arts Degree
☒ (MS)	Master of Science Degree
☐	Specialized Master Degree (specify award type[3]:)
☐	Other (specify award type[3]:)
☐	Doctoral Degree (specify award type[3]:)
☐	K-12 School Personnel Program
☐	Out of Service Area Delivery Program

Chief Academic Officer (or Designee) Signature:
I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

Nicholas Flann Date: October 10, 2016

☒ I understand that checking this box constitutes my legal signature.

[1] For CIP code classifications, please see http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55.
[2] "Proposed Beginning Term" refers to first term after Regent approval that students may declare this program.
[3] Please indicate award such as APE, BFA, MBA, MEd, EdD, JD

Utah System of Higher Education
Program Description - Full Template

Section I: The Request

Utah State University requests approval to offer the following Master's degree(s): Masters of Science in Data Science effective Fall 2017. This program was approved by the institutional Board of Trustees on .

Section II: Program Proposal

Program Description

Present a complete, formal program description.

Researchers across disciplines are increasingly using data-driven science as a complement to traditional hypothesis-driven research. As evidence of a trend in research, in 2012, the White House announced the first "Big Data Research and Development Initiative" spanning NSF, DoD, NIH, DARPA, DoE, and USGS. In 2011 a McKinsey report estimated there would be 140,000 to 190,000 unfilled positions of U.S. data science and analytics experts by 2018. For companies like Google, Facebook, LinkedIn, Amazon, and Walmart data science is becoming integrated into their business models. They are investing heavily in large-scale data analytics to extract information from massive datasets.

In response to these needs, universities are scrambling to improve their existing degree programs and create entirely new offerings. USU currently has no Data Science particular MS degree. To satisfy the needs of students, prospective employers, and communities, the CS department proposes to offer a Master of Science in Data Science.

In our proposed Data Science degree program, students will satisfy following conditions to graduate:

- Take at least 30 credits in total
- Take at least five core Computer Science or Statistics courses. Among the five courses, at least three courses should be 6000
- Actively participate in a new Incubator course that brings together CS data science students with students from across campus working on applied data science research.
- Take 6 research credits
- Additional multidisciplinary courses under their major professor's approval

Consistency with Institutional Mission

Explain how the program is consistent with the institution's Regents-approved mission, roles, and goals. Institutional mission and roles may be found at highereduutah.org/policies/policyr312/ .

The mission of Utah State University is to be one of the nation's premier student-centered land grant and space grant universities by fostering the principle that academics come first; by cultivating diversity of thought and culture; and by serving the public through learning, discovery, and engagement. The Masters of Science in Computer Science program proposed here will advance these objectives, not only within the Computer Science Department, but throughout the University and across Utah. Students trained under this program will gain valuable skills that are in high demand and contribute to the growing high-tech economy in Utah. This year, the university has begun a "big data" initiative with new faculty lines introduced across several departments, including Statistics, Natural Resources, Climate Sciences, Business and Biology. Computer Science will play a pivotal role in this effort because computer scientists research, design and implement the software and algorithms that make these "big data" systems work.

Section III: Needs Assessment

Program Rationale

Describe the institutional procedures used to arrive at a decision to offer the program. Briefly indicate why such a program should be initiated. State how the institution and the USHE benefit by offering the proposed program.

A new Masters of Science program is required to satisfy the rapid growth in the demand for computer scientists who specialize in data science. A new MS program is required, rather than a limited expansion of our existing general computer science MS because data science requires a distinct program of courses due to its multidisciplinary nature and extensive set of computer science skills required. The Computer Science department has laid the groundwork for this initiative over the last three years with two new faculty hires in data science, machine learning and data mining. This new Masters of Science program will help unify research efforts across campus and complement the new Data Analytics program in Statistics and Buisness.

Labor Market Demand

Provide local, state, and/or national labor market data that speak to the need for this program. Occupational demand, wage, and number of annual openings information may be found at sources such as Utah DWS Occupation Information Data Viewer (jobs.utah.gov/jsp/wi/utalmis/gotoOccinfo.do) and the Occupation Outlook Handbook (www.bls.gov/oco).

There is a significant imbalance between the supply and the demand for Data Scientists. Glassdoor report (www.glassdoor.com) ranks Data Scientist job as the “Best Job in America for 2016” based on career opportunities rating, the number of open data science jobs and average salaries earned by data scientists. According to this site, the nationwide average Data Scientist earns $113,000 compared to $63,500 for the average software engineer. The *McKinsey Global Institute* estimates that by 2018 the U.S will need an additional 140,000 to 190,000 with data science skills.

In Utah, IT and software development generates 14.3% of the State's annual payroll at $6.9 billion dollars and employs 8.6% of the total workforce. The 7,000 tech-focused companies in Utah create a local demand for CS students with a data science specialty. Many large-scale data centers are moving to Utah, including the new NSA center in Bluffdale, further increasing demand.

Student Demand

Provide evidence of student interest and demand that supports potential program enrollment. Use Appendix D to project five years' enrollments and graduates. Note: If the proposed program is an expansion of an existing program, present several years enrollment trends by headcount and/or by student credit hours that justify expansion.

The classes offered in our graduate program with a Data Science emphasis have the highest enrollment compared to other classes. These include CS 5800: Databases - 56 students, CS 6800: Advanced databases - 60 students, CS 5665: Introduction to Data Science - 32 students, and CS 6675: Advance Data Science and Mining - 23 students. Based on the market research quoted above, we anticipate high student demand for this program.

Similar Programs

Are similar programs offered elsewhere in the USHE, the state, or Intermountain Region? If yes, identify the existing program(s) and cite justifications for why the Regents should approve another program of this type. How does the proposed program differ from or compliment similar program(s)?

In 2014 the Salt Lake Tribune published an article entitled "University of Utah betting on big data" which announced UoU's new "big data certificate" offered by the Computing Department. The certificate requires students to take five core classes in Advanced Algorithms, Database Systems, Data Mining, Machine Learning and Visualization. The department now offers a Big Data Masters (MS in Computing) and a Big Data Ph.D. (Ph.D. in Computing) (http://www.cs.utah.edu/bigdata/). The MS program extends the certificate requirements to include either five electives (plan C option) or three electives and a project or thesis (plan A or B option). The Ph.D. requires a Ph.D. dissertation.

Our proposed Data Science program will complements UoU's program by taking a multidisciplinary approach where data science faculty from other departments (strengthened by the cluster hire process) work directly with CS faculty and students to develop solutions to real problems, facilitated by the new incubator course. This applied approach fits well with USU's land-grant mission.

Collaboration with and Impact on Other USHE Institutions

Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in higheredutah.org/policies/policyr315/ . Assess the impact the new program will have on other USHE institutions. Describe any discussions with other institutions pertaining to this program. Include any collaborative efforts that may have been proposed.

The proposed Data Science program will not be delivered outside of the designated service area, and due to the multidisciplinary approach and the magnitude of the target population, should not have an adverse impact on other USHE institutions. We anticipate that many of the program participants will come from other closely-related and application-specific fields.

External Review and Accreditation

Indicate whether external consultants or, for a career and technical education program, program advisory committee were involved in the development of the proposed program. List the members of the external consultants or advisory committee and briefly describe their activities. If the program will seek special professional accreditation, project anticipated costs and a date for accreditation review.

There are no accreditation requirements for this program.

Section IV: Program Details

Graduation Standards and Number of Credits

Provide graduation standards. Provide justification if number of credit or clock hours exceeds credit limit for this program type described in R401-3.11, which can be found at higheredutah.org/policies/R401.

Students must complete 30 credit hours as detailed below in Appendix A. Plan A students will be required to complete a Thesis that will be reviewed by their committee.

Admission Requirements

List admission requirements specific to the proposed program.

A bachelors degree in Computer Science or closely related field. Coursework in basic Statistics (equivalent to STAT 3000).

Curriculum and Degree Map

Use the tables in Appendix A to provide a list of courses and Appendix B to provide a program Degree Map, also referred to as a graduation plan.

Section V: Institution, Faculty, and Staff Support

Institutional Readiness

How do existing administrative structures support the proposed program? Identify new organizational structures that may be needed to deliver the program. Will the proposed program impact the delivery of undergraduate and/or lower-division education? If yes, how?

The department's graduate program's organization is well positioned to handle the extra administrative load this new program will entail. Currently, the Associate Department Head oversees the graduate program of approximately 60 MS students and 25 PhD students. This faculty oversight will be sufficient to cover the administration during initial growth of this new program, although we anticipate requiring an additional administrative assistant to better manage the day-to-day operations as the program grows. The undergraduate program is experiencing rapid growth and has recently hired two new instructors to teach undergraduate courses full time to cover the extra classes required. We anticipate that there will be no adverse effects on the quality of our undergraduate program due to this new MS. Indeed, we expect the addition of 5000 level classes in data science related topics to improve the readiness of our graduating undergraduate students.

Faculty

Describe faculty development activities that will support this program. Will existing faculty/instructions, including teaching/ graduate assistants, be sufficient to instruct the program or will additional faculty be recruited? If needed, provide plans and resources to secure qualified faculty. Use Appendix C to provide detail on faculty profiles and new hires.

Two CS faculty members have developed and offered four graduate courses in data science: CS 5800: Databases, CS 6800: Advanced databases, CS 5665: Introduction to Data Science, and CS 6675: Advance Data Science and Mining. Two other faculty members have expressed interest in teaching our newly proposed classes CS 6895: Special Topics in Data Science and CS 5810/6810: Data Science Incubator. The CS department plan to hire two new faculty members by 2017 summer so that they can teach CS 6665: Data Mining, CS 6895: Special Topics in Data Science , along with new courses they create. Graduate students from the existing MS program and the new program will be available to support teaching as GTAs.

Staff

Describe the staff development activities that will support this program. Will existing staff such as administrative, secretarial/ clerical, laboratory aides, advisors, be sufficient to support the program or will additional staff need to be hired? Provide plans and resources to secure qualified staff, as needed.

The Data Science program will recruit one new staff member to serve as the administrative assistant for for the program, and will acquire career, lab, and computing services for its students. The cost of the new personnel and service are a part of the overall program expense budget.

Student Advisement

Describe how students in the proposed program will be advised.

Students in the new program will be advised by their major professor and committee.

Library and Information Resources

Describe library resources required to offer the proposed program if any. List new library resources to be acquired.

No additional library and information resources will be required.

Projected Enrollment and Finance

Use Appendix D to provide projected enrollment and information on related operating expenses and funding sources.

Section VI: Program Evaluation

Program Assessment

Identify program goals. Describe the system of assessment to be used to evaluate and develop the program.

As part of our graduate program assessment we are working with USU Office of Analysis, Assessment, and Accreditation to develop an accreditation processes for the CS graduate program based on best practices developed by the Northwest Commission of Colleges and Universities. This process will be applied to the Data Science program.

Student Standards of Performance

List the standards, competencies, and marketable skills students will have achieved at the time of graduation. How and why were these standards and competencies chosen? Include formative and summative assessment measures to be used to determine student learning outcomes.

Appendix A: Program Curriculum

List all courses, including new courses, to be offered in the proposed program by prefix, number, title, and credit hours (or credit equivalences). Indicate new courses with an X in the appropriate columns. The total number of credit hours should reflect the number of credits required to be awarded the degree.

For variable credits, please enter the minimum value in the table for credit hours. To explain variable credit in detail as well as any additional information, use the narrative box at the end of this appendix.

	Course Number	NEW Course	Course Title	Credit Hours
	General Education Courses (list specific courses if recommended for this program on Degree Map)			
			General Education Credit Hour Sub-Total	
	Required Courses			
+ -	CS 5800		Databases	3
+ -	CS 6800		Advanced databases	3
+ -	CS 6665		Data Mining	3
+ -	CS 5665		Introduction to Data Science	3
+ -	CS 6675		Advanced Data Science and Mining	3
+ -	CS 5830/6830	X	Data Science Incubator	3
+ -				
+ -				
+ -				
+ -				
			Required Course Credit Hour Sub-Total	18
	Elective Courses			
+ -	CS 6895	X	Special Topics in Data Science	3
+ -	MIS 6230		Management of Database Systems	3
+ -	MIS 6330		Database Implementation	3
+ -	PSC 6123		Climate Data Analysis	3
+ -	STAT 5810		Introduction to Statistical Computing	3
+ -	STAT 6550		Graphical Methods	3
+ -	STAT 6650		Stat Learning: Multivariate Stat Analysis for Bioinformatics, Data	3
+ -	MIS 5350		Data Modeling and Analytics	3
+ -				
+ -				
			Elective Credit Hour Sub-Total	24
			Core Curriculum Credit Hour Sub-Total	42

Program Curriculum Narrative

Describe any variable credits. You may also include additional curriculum information.

The program includes 18 hours of core computer science courses that provide the necessary skill set for a data scientist in

computer science. CS 5800 and CS 6800 courses cover large data storage and management methods in databases; CS 5665 and CS 6665 include state-of-the-art algorithms and methodologies and their implementation in class projects; CS 6810 applies the "business incubator" model employed in industry and aims to give students real-world experience in working with domain experts to produce proof-of-concept data science applications. This class, which may be repeated, is based on the recent entrepreneurial process of that bring diverse groups of scientists, engineers and business experts together to explore the feasibility of new technologies. In this class, the experts will be researchers, faculty and their students from other departments that are currently working in data science. Teams will be formed based on the application and computational need, and CS students will be assigned to assist in the implementation of the projects. It is anticipated that many of the projects arising from these collaborations will form the Plan B projects and Plan A theses for CS MS students. The plan C option will not be included in this program because of its emphasis on research.

A student may pursue an MS with (A) a thesis option or (B) a project option. The minimum number of credits for any of the three options is 30 from graduate level classes. Students in the project option must take a minimum of 3 hours and a maximum of 6 hours of thesis hours, designated as CS 6250. For students in the thesis option, a minimum of 6 hours and a maximum of 9 hours of CS 6250 (thesis) is allowed. These requirements mirror our existing Computer Science MS.

The department will offer special topics classes in Data Science based on advancements in technology, specific research interests of faculty and perceived need. Other than this CS option, only a few possible elective courses are listed. The field of data science and the course offerings within the university are in a state of flux, with many departments adding new courses covering data science from their perspective including Education, Natural Resources, Agricultural Science, Instructional Technology, Business, the Climate Center, Biology, and Watershed Sciences. In particular, the Statistics department is currently developing their own data science program and adding many new courses. Statistics underlies many of the methods applied in Data Science, and CS students will be directed to take appropriate courses once it becomes clear which courses are available and appropriate.

Data Science is multidisciplinary and covers a broad range of problems and methods. The classes listed above as electives are a sampling of possible classes the students may take. Many additional classes in data science related areas are currently being designed and approved. The CS program in Data Science needs to be flexible to customize the degree to the requirements and objectives of each student. This is the underlying reason for the built-in flexibility of classes outside the CS core. In every case, classes outside of the core must be approved by the student's committee and managed using the standard Program of Study process.

Degree Map

Degree maps pertain to undergraduate programs ONLY. Provide a degree map for proposed program. Degree Maps were approved by the State Board of Regents on July 17, 2014 as a degree completion measure. Degree maps or graduation plans are a suggested semester-by-semester class schedule that includes prefix, number, title, and semester hours. For more details see http://higheredutah.org/pdf/agendas/201407/TAB%20A%202014-7-18.pdf (Item #3).

Please cut-and-paste the degree map or manually enter the degree map in the table below.

Appendix C: Current and New Faculty / Staff Information

Part I. Department Faculty / Staff

Identify # of department faculty / staff (headcount) for the year preceding implementation of proposed program.

	# Tenured	# Tenure -Track	# Non -Tenure Track
Faculty: Full Time with Doctorate	9	5	2
Faculty: Part Time with Doctorate	0	0	2
Faculty: Full Time with Masters	0	0	0
Faculty: Part Time with Masters	0	0	0
Faculty: Full Time with Baccalaureate	0	0	0
Faculty: Part Time with Baccalaureate	0	0	0
Teaching / Graduate Assistants			38
Staff: Full Time			3
Staff: Part Time			0

Part II. Proposed Program Faculty Profiles

List current faculty within the institution -- with academic qualifications -- to be used in support of the proposed program(s).

	First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.	If "Other," describe
Full Time Faculty							
	Vicki	Allan	T	PhD	Colorado State University	5%	
	Heng Da	Cheng	T	PhD	Purdue University	5%	
	Stephen	Clyde	T	PhD	Brigham Young University	5%	
	Curtis	Dyreson	T	PhD	University of Arizona	15%	
	Nicholas	Flann	T	PhD	Oregon State University	15%	
	Amanda	Hughes	TT	PhD	University of Colorado Boulder	5%	
	Minghui	Jiang	T	PhD	Montana State University	5%	
	Vladimir	Kulyukin	T	PhD	University of Chicago	5%	
	Young-Woo	Kwon	TT	PhD	Virginia Tech	5%	
	Kyumin	Lee	TT	PhD	Texas A&M University	30%	
	Mano	Chad	Other	PhD	University of Notre Dame	0%	Lecturer
	James Dean	Mathias	Other	PhD	Utah State University	0%	Lecturer
	Tung	Nguyen	TT	PhD	Iowa State University	5%	
	Xiaojun	Qi	T	PhD	Louisiana State University	5%	
	Haitao	Wang	TT	PhD	University of Notre Dame	5%	
	Daniel	Watson	T	PhD	Purdue University	10%	
Part Time Faculty							
	Kenneth	Sundberg	Other	PhD	Brigham Young University	0%	Instructor
	Jacob	Christensen	Other	PhD	Utah State University	0%	Instructor

	First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.	If "Other," describe

Part III: New Faculty / Staff Projections for Proposed Program

Indicate the number of faculty / staff to be hired in the first three years of the program, if applicable. Include additional cost for these faculty / staff members in Appendix D.

	# Tenured	# Tenure -Track	# Non -Tenure Track	Academic or Industry Credentials Needed	Est. % of time to be dedicated to proposed program.
Faculty: Full Time with Doctorate	0	2	0		60%
Faculty: Part Time with Doctorate	0	0	0		
Faculty: Full Time with Masters	0	0	0		
Faculty: Part Time with Masters	0	0	0		
Faculty: Full Time with Baccalaureate	0	0	0		
Faculty: Part Time with Baccalaureate	0	0	0		
Teaching / Graduate Assistants			10		30%
Staff: Full Time			1		100%
Staff: Part Time			0		

Appendix D: Projected Program Participation and Finance

Part I.

Project the number of students who will be attracted to the proposed program as well as increased expenses, if any. Include new faculty & staff as described in Appendix C.

Three Year Projection: Program Participation and Department Budget						
	Year Preceding Implementation	New Program				
		Year 1	Year 2	Year 3	Year 4	Year 5
Student Data						
# of Majors in Department	630	674	721	771	825	883
# of Majors in Proposed Program(s)		10	20	35	50	54
# of Graduates from Department	84	89	96	102	110	117
# Graduates in New Program(s)		0	26	34	40	47

Department Financial Data				
	Department Budget			
		Year 1	Year 2	Year 3
Project additional expenses associated with offering new program(s). Account for New Faculty as stated in Appendix C, "Faculty Projections."	Year Preceding Implementation (Base Budget)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)
EXPENSES – nature of additional costs required for proposed program(s)				
List salary benefits for additional faculty/staff each year the positions will be filled. For example, if hiring faculty in year 2, include expense in years 2 and 3. List one-time operating expenses only in the year expended.				
Personnel (Faculty & Staff Salary & Benefits)	$2,029,180	$159,500	$162,690	$165,943
Operating Expenses (equipment, travel, resources)	$92,149			
Other:				
TOTAL PROGRAM EXPENSES		$159,500	$162,690	$165,943
TOTAL EXPENSES	$2,121,329	$2,280,829	$2,284,019	$2,287,272
FUNDING – source of funding to cover additional costs generated by proposed program(s)				
Describe internal reallocation using Narrative 1 on the following page. Describe new sources of funding using Narrative 2.				
Internal Reallocation		$116,000	$118,320	$120,686
Appropriation		$43,500	$44,370	$45,257
Special Legislative Appropriation				
Grants and Contracts				
Special Fees				
Tuition				
Differential Tuition (requires Regents approval)				
PROPOSED PROGRAM FUNDING		$159,500	$162,690	$165,943
TOTAL DEPARTMENT FUNDING	$0	$159,500	$162,690	$165,943
Difference				
Funding - Expense	($2,121,329)	($2,121,329)	($2,121,329)	($2,121,329)

Part II: Expense explanation

Expense Narrative

Describe expenses associated with the proposed program.

A cluster hire specifically in Data Science is underway University-wide. Faculty are being hired over a diversity of colleges and departments to support USU's new emphasis in Data Science. Many of these hires are directed to support specific applications of Data Science in Business, Agriculture, Education, Climate, Science and the Humanities. Computer Science has been allocated one of these positions to support the proposed MS DS program specifically. An expectation of this new hire will be that they will contribute to teaching our existing Data Science classes and our newly proposed classes in advanced topics and the incubator class. In addition to the cluster hire, the CS department has on-going funds to hire another faculty in Data Science. The search for persons to fill these two new faculty positions is underway.

Additional resources to support this new program such as staff, equipment, classroom and office space will be covered by the COE and university commitment to support the growth of the CS department. For instance, COE is in the process of arranging for the CS department to move to a building local to the Engineering building that will increase the square footage available. Additionally, there is a commitment to invest in the extensive remodeling of this space to better accommodate the needs of the CS department.

Part III: Describe funding sources

Revenue Narrative 1

Describe what internal reallocations, if applicable, are available and any impact to existing programs or services.

Current faculty members and staff will assist in the development and maintenance of this program. Two new hires which have already been allocated will be tasked primarily with this program.

Revenue Narrative 2

Describe new funding sources and plans to acquire the funds.

Utah System of Higher Education
New Academic Program Proposal
Cover/Signature Page - Abbreviated Template

Institution Submitting Request:	Utah State University
Proposed or Current Program Title:	Computer Science Teaching Minor
Sponsoring School, College, or Division:	College of Engineering
Sponsoring Academic Department(s) or Unit(s):	Computer Science
Classification of Instructional Program Code[1] :	11.07
Min/Max Credit Hours Required of Full Program:	16 / 18
Proposed Beginning Term[2]:	Spring 2018
Institutional Board of Trustees' Approval Date:	

☐	Certificate of Proficiency	☐ Entry-level CTE CP	☐ Mid-level CP
☐	Certificate of Completion		
☒	Minor		
☐	Graduate Certificate		
☐	K-12 Endorsement Program		
☐	NEW Emphasis for Regent-Approved Program		
☐	Out of Service Area Delivery Program		

Chief Academic Officer (or Designee) Signature:
I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

_____ Date:

☐ I understand that checking this box constitutes my legal signature.

[1] For CIP code classifications, please see http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55.
[2] "Proposed Beginning Term" refers to first term after Regent approval that students may declare this program.

Utah System of Higher Education
Program Description - Abbreviated Template

Section I: The Request

Utah State University requests approval to offer the following Minor: Computer Science Teaching Minor effective Spring 2018. This program was approved by the institutional Board of Trustees on .

Section II: Program Proposal/Needs Assessment

Program Description/Rationale

Present a brief program description. Describe the institutional procedures used to arrive at a decision to offer the program. Briefly indicate why such a program should be initiated. State how the institution and the USHE benefit by offering the proposed program. Provide evidence of student interest and demand that supports potential program enrollment.

Minor will be approved at the department and college level.

From Myra Cook Brown (CS Advisor): Many math teaching majors (and to some extent science teaching majors) have asked about a CS teaching credential. This interest has been ongoing for as long as I have been the CS advisor. At the most recent majors meeting, this topic got a lot of discussion.

USU has one of the top education programs in the nation. It makes sense to attach a CS teaching credential to our education program. Additionally, there is an increasing need for CS in our state.

Labor Market Demand

Provide local, state, and/or national labor market data that speak to the need for this program. Occupational demand, wage, and number of annual openings information may be found at sources such as Utah DWS Occupation Information Data Viewer (jobs.utah.gov/jsp/wi/utalmis/gotoOccinfo.do) and the Occupation Outlook Handbook (www.bls.gov/oco).

According to the occupation Outlook Handbook, median pay for Career and Technical Education Techers was $53,800 per year in 2015. There were 231,800 jobs in 2014 with a expected 4% growth grade (2014-2024).

Consistency with Institutional Mission/Impact on Other USHE Institutions

Explain how the program is consistent with the institution's Regents-approved mission, roles, and goals. Institutional mission and roles may be found at higheredutah.org/policies/policyr312/ . Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in higheredutah.org/policies/policyr315/ .

This program is consistent with the mission of Utah State University as it aids teacher preparation.

Finances

What costs or savings are anticipated in implementing the proposed program? If new funds are required, indicate expected sources of funds. Describe any budgetary impact on other programs or units within the institution.

$6K per year will be required to teach CS4300, the new methods course. Other required classes are currently being taught and require no new funding. Funds will be paid for out of normal departmental budgets.

Section III: Curriculum

Program Curriculum

List all courses, including new courses, to be offered in the proposed program by prefix, number, title, and credit hours (or credit equivalences). Indicate new courses with an X in the appropriate columns. The total number of credit hours should reflect the number of credits required to receive the award. For NEW Emphases, skip to emphases tables below.
For variable credits, please enter the minimum value in the table below for credit hours. To explain variable credit in detail as well as any additional information, use the narrative box below.

		Course Number	NEW Course	Course Title	Credit Hours
		General Education Courses (list specific courses if recommended for this program on Degree Map)			
				General Education Credit Hour Sub-Total	
		Required Courses			
+	-	CS 1400		Introduction to Computer Science CS1	3
+	-	CS 1405		Introduction to Computer Science CS1 Lab	1
+	-	CS1410		Introduction to Computer Science CS2	3
+	-	CS2420		Algorithms and Data Structures CS3	3
+	-	CS4300		Teaching Methods	3
+	-	SCED3300		Clinical Experience 1	1
+	-				
+	-				
+	-				
+	-				
				Required Course Credit Hour Sub-Total	14
		Elective Courses			
+	-	CS2410		Introduction to Event Driven Programming and GUI's	3
+	-	CS2610		Developing Dynamic, Database-Driven, Web Applications	3
+	-	CS3100		Operating Systems and Concurrency	3
+	-	CS3200		Mobile Application Development	3
+	-	CS3430		Computational Science: Python and Perl Programming (DSC/QI)	3
+	-	CS3450		Introduction to Software Engineering (CI)	3
+	-	CS4700		Programming Languages	3
+	-			Any CS class numbered 5000 of above (3-4 credits)	3
+	-				
+	-				
				Elective Credit Hour Sub-Total	6
				Core Curriculum Credit Hour Sub-Total	20

Program Curriculum Narrative

Describe any variable credits. You may also include additional curriculum information, as needed.

The 5000 level courses may be 4 credits.

Degree Map

Degree maps pertain to undergraduate programs ONLY. Provide a degree map for proposed program. Degree Maps were approved by the State Board of Regents on July 17, 2014 as a degree completion measure. Degree maps or graduation plans are a suggested semester-by-semester class schedule that includes prefix, number, title, and semester hours. For more details see http://higheredutah.org/pdf/agendas/201407/TAB%20A%202014-7-18.pdf (Item #3).

Please cut-and-paste the degree map or manually enter the degree map in the table below

First Year Fall	Cr. Hr.	First Year Spring	Cr. Hr.
CS 1400: Introduction to Computer Science--CS	3	CS 1410: Introduction to Computer Science--CS	3
CS 1405: Introduction to Computer Science--CS	1		
Total	4	Total	3
Second Year Fall	**Cr. Hr.**	**Second Year Spring**	**Cr. Hr.**
CS 2420: Algorithms and Data Structures--CS 2	3	CS Elective	3
Total	3	Total	3
Third Year Fall	**Cr. Hr.**	**Third Year Spring**	**Cr. Hr.**
CS Elective	3	CS4300 Computer ScienceTeaching Methods	3
Total	3	Total	3
Fourth Year Fall	**Cr. Hr.**	**Fourth Year Spring**	**Cr. Hr.**
SCED3300	1		
Total	1	Total	

Utah System of Higher Education
New Academic Program Proposal
Cover/Signature Page - Full Template

Institution Submitting Request:	Utah State University
Proposed Program Title:	PhD in Landscape Architecture
Sponsoring School, College, or Division:	College of Agriculture and Applied Sciences
Sponsoring Academic Department(s) or Unit(s):	Landscape Architecture and Environmental Planning
Classification of Instructional Program Code[1] :	04-0601
Min/Max Credit Hours Required of Full Program:	60 / 60
Proposed Beginning Term[2]:	Fall 2017
Institutional Board of Trustees' Approval Date:	

Program Type (check all that apply):

☐ (AAS)	Associate of Applied Science Degree
☐ (AA)	Associate of Arts Degree
☐ (AS)	Associate of Science Degree
☐	Specialized Associate Degree (specify award type[3]:)
☐	Other (specify award type[3]:)
☐ (BA)	Bachelor of Arts Degree
☐ (BS)	Bachelor of Science Degree
☐	Specialized Bachelor Degree (specify award type[3]:)
☐	Other (specify award type[3]:)
☐ (MA)	Master of Arts Degree
☐ (MS)	Master of Science Degree
☐	Specialized Master Degree (specify award type[3]:)
☐	Other (specify award type[3]:)
☒	Doctoral Degree (specify award type[3]: PhD)
☐	K-12 School Personnel Program
☐	Out of Service Area Delivery Program

Chief Academic Officer (or Designee) Signature:
I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

Please type your first and last name _____ Date:

☐ I understand that checking this box constitutes my legal signature.

[1] For CIP code classifications, please see http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55.
[2] "Proposed Beginning Term" refers to first term after Regent approval that students may declare this program.
[3] Please indicate award such as APE, BFA, MBA, MEd, EdD, JD

Utah System of Higher Education
Program Description - Full Template

Section I: The Request

Utah State University requests approval to offer the following Doctoral degree(s): PhD in Landscape Architecture effective Fall 2017. This program was approved by the institutional Board of Trustees on .

Section II: Program Proposal

Program Description

Present a complete, formal program description.

Utah State University (USU), College of Agriculture and Applied Sciences, proposes to offer an interdisciplinary doctoral program in Landscape Architecture. The mission of the doctoral program in Landscape Architecture is to (1) prepare leaders and future faculty in landscape architecture, and (2) engage in creative intellectual work that contributes to the theory and practice of landscape architecture. Students will apply critical theories and methods in landscape architecture to address the dynamic issues and scales of natural and built landscapes in the context of human systems. This mission will be accomplished through a core set of landscape architecture courses, research methods courses, advanced electives, and scholarly experiences. The program will produce experts in experimental and applied design research across a variety of academic disciplines.

Consistency with Institutional Mission

Explain how the program is consistent with the institution's Regents-approved mission, roles, and goals. Institutional mission and roles may be found at higheredutah.org/policies/policyr312/ .

The proposed doctoral program in Landscape Architecture is consistent with USU's mission "to discover, create, and transmit knowledge through education and training programs at the undergraduate, graduate, and professional levels; through research and development; and through service and extension programs" (R312, 4.1.1). This program specifically addresses USU's goals and objectives for strengthening the graduate program. In addition, the goals of discovery and promotion of excellence in research and scholarship are consistent with this program's focus on producing strong researchers and future faculty in the field of landscape architecture.

The proposed program will benefit the institution by adding to the doctoral program offerings. Given that USU is focused on increasing graduate enrollments, specifically doctoral enrollments, this program will benefit USU. In terms of benefits to USHE and the state, as noted in the section above, the doctoral program in Landscape Architecture will serve the public through learning, discovery, and engagement through a new cadre of leaders and researchers who can advance discoveries in landscape architecture to solve problems in the design, planning, and management of natural and built landscapes across the intermountain west and around the world.

Section III: Needs Assessment

Program Rationale

Describe the institutional procedures used to arrive at a decision to offer the program. Briefly indicate why such a program should be initiated. State how the institution and the USHE benefit by offering the proposed program.

The demand for landscape architecture is strong with projected growth of 5% between 2014 and 2024[2]. Yet, numerous studies continue to confirm that the profession of landscape architecture is growing at a rate well below that needed to meet expected demand[3]. The profession and its professional society, the American Society of Landscape Architects (ASLA), continue to challenge the academic community to

accelerate the expansion of education programs to address the shortfall. This, compounded by the shift in the academic environment where landscape architecture faculty success is based increasingly on research performance and behaviors[4], is resulting in increased demand for doctoral-level graduates to fill a growing number of research, teaching and practice positions in universities. Faculty position announcements reflect this need, as the vast majority indicate a preference for applicants who possess PhDs.

In a recent paper that appeared in Landscape Research Record, Christensen and Michael[4], noted a critical need for greater preparation of the landscape architecture academy in conceptualizing, acquiring support for, conducting, and reporting meaningful research. Doing so will lead to greater success in the academic environment, support for evidence-based professional practice, and provide a much needed theoretical foundation for the future of landscape architecture. We agree that landscape architecture has much to offer educational attitudes and approaches, and we believe we are poised to be at the forefront of this exciting new movement.

There is a strong student demand for landscape architecture doctoral programs, with few opportunities. Within the intermountain region, there is a PhD landscape architecture program at the University of Oregon and a PhD program with an emphasis in landscape architecture at the University of Colorado Denver. Student demand and the desire to provide programs that students are interested in is leading to greater interest in creating PhD programs in research universities like USU. However, presently there remains few existing programs in the United States and particularly in the intermountain region.

As one of Utah's two state-supported research universities, Utah State University has focused on hiring strong faculty who conduct cutting-edge research. The proposed PhD program in Landscape Architecture, in addition to adding research strength to the University with a new PhD, will also complement and strengthen current University programs in the Emma Eccles Jones College of Education and Human Services, the College of Engineering, the College of Natural Resources, and the College of Agriculture and Applied Science. Faculty and students across departments in these colleges are already collaborating on research. The PhD program in Landscape Architecture will bring these faculty and students together into one program, increasing opportunities for cross-disciplinary learning and collaboration.

Labor Market Demand

Provide local, state, and/or national labor market data that speak to the need for this program. Occupational demand, wage, and number of annual openings information may be found at sources such as Utah DWS Occupation Information Data Viewer (jobs.utah.gov/jsp/wi/utalmis/gotoOccinfo.do) and the Occupation Outlook Handbook (www.bls.gov/oco).

In September 2016, indeed.com listed 77 landscape architecture faculty jobs that were available in the US. The Council of Educators in Landscape Architecture (CELA) listed 10 available faculty positions in landscape architecture as of September 2016. These were largely full-time tenure-track openings in university departments of landscape architecture, architecture, or planning but they are also in private industry and research institutes.

The proposed PhD program in Landscape Architecture will respond the growing need for landscape architects with expertise in applying basic research methodologies and educational training. Given the

current job market demand and scarcity of PhD programs, it is expected that graduates of USU's program will be well-positioned to move into postdoctoral and other academic positions.

Student Demand

Provide evidence of student interest and demand that supports potential program enrollment. Use Appendix D to project five years' enrollments and graduates. Note: If the proposed program is an expansion of an existing program, present several years enrollment trends by headcount and/or by student credit hours that justify expansion.

There is a strong student demand for landscape architecture doctoral programs. Three schools in the United States offer a PhD in landscape architecture. And an additional eighteen schools offer PhD programs in allied disciplines with an emphasis in landscape architecture. The closest landscape architecture PhD program is at the University of Oregon, with the closest PhD with an emphasis in landscape architecture at the University of Colorado-Denver in Architecture. Excepting the University of Colorado-Denver, there are no landscape architecture PhD programs in the intermountain west.

The graduate programs of faculty participating in this proposed Landscape Architecture PhD program contain students who are interested in obtaining knowledge and research skills in landscape architecture. There is a need for a doctoral degree that will enable these students to receive advanced research and academic experiences. More students wanting a PhD degree in landscape architecture will be able to stay in Utah rather than go out of the intermountain west. This change will help to keep more talented students in Utah for their doctoral degrees.

Similar Programs

Are similar programs offered elsewhere in the USHE, the state, or Intermountain Region? If yes, identify the existing program(s) and cite justifications for why the Regents should approve another program of this type. How does the proposed program differ from or compliment similar program(s)?

There is no similar PhD program in landscape architecture within the USHE. The closest program is the PhD program in Metropolitan Planning, Policy and Design at the University of Utah. The doctoral degree helps meet society's need for researchers, scholars, teachers, and leaders to make metropolitan areas sustainable and resilient. The degree is managed by the Department of City & Metropolitan Planning and is designed to facilitate the interdisciplinary culture of the University of Utah. Depending on the nature of prior graduate work, the doctoral degree will require between 61 and 83 credit hours, or more, and extend a minimum of six full time semesters of course work. The degree includes core, dissertation field, qualifying examination, and dissertation benchmarks. The core is composed of a sequence of semester-long doctoral seminars in metropolitan planning, metropolitan policy, metropolitan design, research design, technical writing, and teaching methods for a total of 21 credits. Doctoral students also complete a minimum of 18 credits in a dissertation field including courses outside the Department.

The significant difference between the program at the University of Utah and the proposed program at Utah State University is (1) that the curriculum and research experiences at the UofU are focused primarily on metropolitan planning, policy, and design (urban issues). The program at USU will primarily focus on the dynamic issues and scales of natural and built landscapes in the context of human systems. This focus encompasses urban issues, which may be addressed according to students' interests. However, our faculty and students are currently studying such issues as landscape design, landscape planning, research methodology, social equity, instructional technology, landscape history, urban planning and design (the only overlap), community branding, landscape visualization, landscape representation, GIS application, sustainable development models and assessment, campus planning, ecosystem

services, green infrastructure, stormwater management, and recreation environments.

There is a need for a program that addresses landscape-scale issues, including rural and wildland contexts.

Collaboration with and Impact on Other USHE Institutions

Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in higheredutah.org/policies/policyr315/ . Assess the impact the new program will have on other USHE institutions. Describe any discussions with other institutions pertaining to this program. Include any collaborative efforts that may have been proposed.

No impacts on other USHE institutions are expected. It is expected that faculty and students of the PhD in Landscape Architecture may collaborate with the faculty and students of the PhD in Metropolitan Planning, Policy and Design.

External Review and Accreditation

Indicate whether external consultants or, for a career and technical education program, program advisory committee were involved in the development of the proposed program. List the members of the external consultants or advisory committee and briefly describe their activities. If the program will seek special professional accreditation, project anticipated costs and a date for accreditation review.

As it is not the intent of the Landscape Architecture PhD program to prepare students to practice landscape architecture, the PhD will not be an accredited degree for practice. There are currently no agencies or associations that accredit programs such as this one. No external consultants were involved in the development of the proposed program, although the doctoral program was modeled on the interdisciplinary Disability Disciplines doctoral program in the College of Education and Human Services at Utah State University, which program has a focus on academic professional preparation.

Section IV: Program Details

Graduation Standards and Number of Credits

Provide graduation standards. Provide justification if number of credit or clock hours exceeds credit limit for this program type described in R401-3.11, which can be found at higheredutah.org/policies/R401.

Students entering the program with a master's degree will be required to earn a minimum of 60 credits for graduation. All students will complete 6 hours of core landscape architecture courses, 14 credit hours of statistics and research design, 3 hours of instructional design, 3 hours of grant proposal development instruction, 12 hours of advanced electives in support of the student's focus area, 3 hours of academic applied learning experiences, 7 hours of academic professional product experiences, and 12 hours of dissertation credits for a total of 60 credits post masters. The total credit requirement meets the minimum requirement for a doctoral degree at USU of 60 semester credits in addition to a master's degree. This credit requirement is consistent with other doctoral programs across the nation, the average credit requirement of which is 61 credits.

This doctoral program in landscape architecture has a different focus than other programs in the United States, in that one significant objective is faculty preparation. While academic products are expectations of other programs, they are requirements of this doctoral program in landscape architecture. These academic products (conference presentation, writing for journal publication, grant writing, and literature review) are approached as applied learning experiences with assigned faculty mentors in the process. As students will collaborate closely with a faculty member on each applied learning experience, with defined and assessed learning objectives, participation for credit, albeit modest, is warranted and reflects the time

commitment of both the faculty and the student. This approach is modeled on an existing and successful doctoral program in Disability Disciplines at Utah State University which is also focused heavily on the preparation of future academic professionals.

Admission Requirements

List admission requirements specific to the proposed program.

Admission to the PhD program will be granted to a small number of highly qualified individuals each year. Prospective students will submit the standard graduate school application through the school of graduate studies. Admissions criteria will be consistent with USU's School of Graduate Studies requirements, including a GPA for the last 60 credits of at least a 3.0 and GRE scores for the verbal and quantitative areas at the 40th percentile or above. Applicants should have completed a master's degree in an allied field to landscape architecture, such as planning, landscape architecture, or architecture, before entering. Applicants will also need to demonstrate, through their statement of interest / letter of intent, fit and research interests that are consistent with current faculty in the program.

Curriculum and Degree Map

Use the tables in Appendix A to provide a list of courses and Appendix B to provide a program Degree Map, also referred to as a graduation plan.

Section V: Institution, Faculty, and Staff Support

Institutional Readiness

How do existing administrative structures support the proposed program? Identify new organizational structures that may be needed to deliver the program. Will the proposed program impact the delivery of undergraduate and/or lower-division education? If yes, how?

Current administrative structures that support graduate programs, including supports from the Office of Research and Graduate Studies as well as college and departmental infrastructures that are already in place will be used to support this program. No new supports or organizational structures are needed. This Landscape Architecture PhD program will be administratively housed in the Landscape Architecture and Environmental Planning Department. The staff resources (e.g., Graduate Program Director) already in place will be used to support this program. This proposed program will have minimal impact on the delivery of undergraduate courses, likely confined to the participation of PhD students as instructors in select undergraduate courses as part of their academic preparation internship/practicum experience. The proposed program will have greater impact on the delivery of graduate courses in LAEP. Some of the graduate courses currently being taught will be part of this program (LAEP 6890, 6740, 6910, and 6930) will see increased rigor as necessary to support doctoral students.

Faculty

Describe faculty development activities that will support this program. Will existing faculty/instructions, including teaching/ graduate assistants, be sufficient to instruct the program or will additional faculty be recruited? If needed, provide plans and resources to secure qualified faculty. Use Appendix C to provide detail on faculty profiles and new hires.

USU is perfectly poised to offer the state and region's only doctoral program in landscape architecture with its wide range of expertise in research, education, design, engineering, natural resources, and social systems - all essential to the design, planning, and management of natural and built landscapes. Further, USU's department of Landscape Architecture and Environmental Planning (LAEP) is the only landscape

architecture program in Utah; the faculty of which, reflecting national trends, has undergone a shift to faculty with doctoral training.

Members of the core faculty are strongly interdisciplinary and actively engaged in the discovery, application, and integration of knowledge, as well as artistry that creates insight and understanding. These scholarly activities are in the areas of design, planning, research methodology, social equity, instructional technology, landscape history, urban planning and design, community branding, visualization, representation, GIS application, sustainable development models and assessment, campus planning, ecosystem services, green infrastructure, stormwater management, and recreation environments. In addition, the LAEP faculty collaborate widely across each college at USU as well as within LAEP's home College of Agriculture and Applied Sciences.

LAEP department faculty will support the Landscape Architecture PhD program. However, given the interdisciplinary nature of this program, faculty outside LAEP will also be involved in the program, primarily faculty in the College of Education and Human Services whose current PhD courses emphasizing research methods and instructional design are applicable to the mission of this program.

No new lines are required for this program as existing faculty can cover program needs. However, additional faculty lines would strengthen the program in terms of diversity of course offerings and design research experiences. Opportunities for targeted hires will be explored over time.

Staff

Describe the staff development activities that will support this program. Will existing staff such as administrative, secretarial/ clerical, laboratory aides, advisors, be sufficient to support the program or will additional staff need to be hired? Provide plans and resources to secure qualified staff, as needed.

Existing staff will be utilized to provide support to the Landscape Architecture PhD program. Although interdisciplinary, the program will be housed in the LAEP Department where the current staff can provide support for admissions, student tracking, etc. As with all doctoral-level program advising, advising duties will be carried by individual faculty mentors as well as the program steering committee, which will be comprised of all faculty involved in the Landscape Architecture PhD program.

Student Advisement

Describe how students in the proposed program will be advised.

Students will be assigned a faculty advisor, based on aligned scholarly interests, at the time they are admitted to the program. This faculty member will remain the student's primary advisor through the student's time in the program. In addition to their faculty advisor, each student's progress in the program will be reviewed annually by all program faculty in an annual student review meeting. Students will receive written feedback on their progress following this meeting. The feedback will address progress in the areas of:

- Research skills and progress
- Progress toward completion of the program
- Didactic coursework
- Internship performance
- Other accomplishments and/or concerns

Library and Information Resources

Describe library resources required to offer the proposed program if any. List new library resources to be acquired.

No additional library resources will be needed to support this program. Key journals in the Landscape Architecture area (e.g., Landscape Journal, Journal of Landscape Architecture, Landscape and Urban Planning, Journal of the American Planning Association, Landscape Research Record, etc.) are available digitally through USU's library.

Projected Enrollment and Finance

Use Appendix D to provide projected enrollment and information on related operating expenses and funding sources.

Section VI: Program Evaluation

Program Assessment

Identify program goals. Describe the system of assessment to be used to evaluate and develop the program.

The overall goal of this program is to produce landscape architecture PhD graduates who will be successful in research and academic settings post-graduation. Data on placement rates of students will be an important metric of success. While in the program, students will be expected to meet certain standards (as described below). Outcomes on these standards will also be used to judge program success.

Student Standards of Performance

List the standards, competencies, and marketable skills students will have achieved at the time of graduation. How and why were these standards and competencies chosen? Include formative and summative assessment measures to be used to determine student learning outcomes.

The profession and its professional society, the American Society of Landscape Architects (ASLA), continue to challenge the academic community to accelerate the expansion of education programs to address the shortfall in trained landscape architects and market demand. This, compounded by the shift in the academic environment where landscape architecture faculty success is based increasingly on research performance and behaviors[4] above, is resulting in increased demand for doctoral-level graduates to fill a growing number of research, teaching and practice positions in universities. Faculty position announcements reflect this need, as the vast majority indicate a preference for applicants who possess PhDs.

The Landscape Architecture PhD program in Utah State University's College of Agriculture and Applied Sciences will train the next generation of university educators and leaders to both engage in creative intellectual work that contributes to the theory and practice of landscape architecture and prepare future practitioners to address the dynamic issues and scales of natural and built landscapes in the context of human systems.

Students in the Landscape Architecture PhD Program will learn the theoretical, conceptual and methodological issues involved in design research. Upon completion of the program, students will be prepared to design and conduct design research that employs a variety of methods and that contributes to the theory and practice of landscape architecture. Students will also participate in applied learning experiences and products to prepare them for the professoriate, such as grant writing, writing for

publication, and university teaching. Completion of the PhD program will help students maximize their marketability for academic positions at graduation, or contribute significantly to the professional development of current academic faculty.

Appendix A: Program Curriculum

List all courses, including new courses, to be offered in the proposed program by prefix, number, title, and credit hours (or credit equivalences). Indicate new courses with an X in the appropriate columns. The total number of credit hours should reflect the number of credits required to be awarded the degree.

For variable credits, please enter the minimum value in the table for credit hours. To explain variable credit in detail as well as any additional information, use the narrative box at the end of this appendix.

	Course Number	NEW Course	Course Title	Credit Hours
	General Education Courses (list specific courses if recommended for this program on Degree Map)			
			General Education Credit Hour Sub-Total	
	Required Courses			
+ -	LAEP 7800	X	Introduction to the Professoriate	1
+ -	LAEP 6740		Landscape Architecture Theory and Methods	3
+ -	LAEP 6910		Journal Reading Group 1	1
+ -	LAEP 6930		Journal Reading Group 2	1
+ -	LAEP 6880		Design Research Methods	2
+ -	EDUC 6600		Measurement, Design and Analysis 1	3
+ -	EDUC 7610		Measurement, Design and Analysis 2	3
+ -	EDUC 6770		Qualitative Research Methods 1	3
+ -	EDUC 7770		Qualitative Research Methods 2	3
+ -	PSY 7700		Grant Writing	3
+ -	ITLS 6350		Instructional Design Process 1	3
+ -	LAEP 7810	X	Applied Learning Experience: Research Internship	1
+ -	LAEP 7820	X	Applied Learning Experience: College Teaching Internship - Seminar	1
+ -	LAEP 7830	X	Applied Learning Experience: College Teaching Internship - Studio	1
+ -	LAEP 7910	X	Professional Product: Conference Presentation	1
+ -	LAEP 7920	X	Professional Product: Writing for Publication	2
+ -	LAEP 7930	X	Professional Product: Grant Writing	2
+ -	LAEP 7940	X	Professional Product: Review of Literature	2
+ -	LAEP 7970	X	Dissertation Research	12
			Choose of the following courses:	
+ -				
+ -				
			Required Course Credit Hour Sub-Total	48
	Elective Courses			
+ -	Advanced Electives		Electives in support of student's focus area	12
			Choose of the following courses:	
+ -				
+ -				
			Elective Credit Hour Sub-Total	12
			Core Curriculum Credit Hour Sub-Total	60

Program Curriculum Narrative

Describe any variable credits. You may also include additional curriculum information.

An interdisciplinary aspect of the doctoral program in Landscape Architecture at USU is the inclusion of advanced elective requirements which will be primarily met outside of the LAEP program. Given the current focus of LAEP's curriculum on practitioner preparation through a bachelors or 1st professional master's degree, many of the department's current courses available as electives would be repetitive to a doctoral student who already holds an accredited degree from an allied field to landscape architecture. Rather doctoral students will be expected to seek electives in support of their research and/or interest area. The selection of electives to support the candidate's emphasis area will be done in consultation with the instructors in the program of interest to identify the options which would best meet the candidate's objectives. A few examples, developed in consultation with the programs of interest, are provided below. A doctoral student may seek electives in management from the Huntsman School of Business to prepare for leadership in an academic environment. Another doctoral student may seek electives in the S.J. & Jessie E. Quinney College of Natural Resources to support a research interest in ecosystem services-focused land planning. Another doctoral student interested in rural community development will seek electives in rural sociology through the College of Humanities and Social Sciences. Possible course electives, selected in consultation with the program of interest, for each of these examples are listed below. However, these are not the only possible emphases, with other possibilities reflecting the expertise of the Landscape Architecture doctoral program faculty and the institution. Each doctoral student will propose electives for their program of study in consultation with their faculty chair, dissertation committee, and external departments as appropriate to their research interests.

<u>Ecosystem Services Emphasis Electives</u>

ENVS 6000 Theoretical Foundations in Human Dimensions of Ecosystem Science and Management - 3
ENVS 6100 Introduction to Modeling Human-Environment Systems - 3
ENVS 6550 Sustainability: Concepts and Measurement - 3
ENVS TBD Ecosystem Services (planned course to be offered in the future) - 3

<u>Rural Community Development Electives</u>

SOC 5640 Managing Community Conflict - 3
SOC 6630 Natural Resources and Social Development - 3
SOC 7100 Advanced Survey Analysis - 3
SOC 7720 Community Theory and Research - 3

<u>Management Emphasis Electives</u>

ACCT 6350 Accounting for Management Decision Making - 3 or FIN 6420 Solving Financial Problems - 3
MGT 6890 Advanced Strategy - 3 or MGT 6200 Negotiation for Executives - 3
MGT 6320 Leadership and Operational Excellence - 3
MGT 6500 Managing Individuals and Groups - 3

Example Program Schedule

Year 1

Fall Semester - 10 credits

- LAEP 7800 Introduction to the Professoriate - 1
- LAEP 6740 Landscape Architecture Theory and Methods - 3
- EDUC 6600 Measurement, Design and Analysis 1 - 3
- Elective - 3

Spring Semester - 9 credits

- LAEP 6880 Design Research Methods - 2
- EDUC 7610 Measurement, Design and Analysis 2 - 3
- PSY 7700 Grant Writing - 3
- LAEP 6910 Journal Reading Group 1 - 1

Summer Semester - 3 credits

- ITLS 6350 Instructional Design Process 1 - 3

Year 2

Fall Semester - 10 credits

- EDUC 6770 Qualitative Research Methods 1 - 3
- LAEP 6930 Journal Reading Group 2 - 1
- LAEP 7810 Research Internship - 1
- LAEP 7820 College Teaching Internship - Seminar - 1
- LAEP 7930 Grant Writing - 2
- LAEP 7940 Review of Literature - 2

Spring Semester - 10 credits

- EDUC 7770 Qualitative Research Methods 2 - 3
- LAEP 7830 College Teaching Internship - Studio - 1
- LAEP 7910 Conference Presentation - 1
- LAEP 7920 Writing for Publication - 2
- Elective - 3

Year 3

Fall Semester - 9 credits

- Electives - 3
- Dissertation Research - 6

Spring Semester - 9 credits

- Electives - 3
- Dissertation Research - 6

Degree Map

Degree maps pertain to undergraduate programs ONLY. Provide a degree map for proposed program. Degree Maps were approved by the State Board of Regents on July 17, 2014 as a degree completion measure. Degree maps or graduation plans are a suggested semester-by-semester class schedule that includes prefix, number, title, and semester hours. For more details see http://higheredutah.org/pdf/agendas/201407/TAB%20A%202014-7-18.pdf (Item #3).

Please cut-and-paste the degree map or manually enter the degree map in the table below.

Appendix C: Current and New Faculty / Staff Information

Part I. Department Faculty / Staff

Identify # of department faculty / staff (headcount) for the year preceding implementation of proposed program.

	# Tenured	# Tenure -Track	# Non -Tenure Track
Faculty: Full Time with Doctorate	4	4	0
Faculty: Part Time with Doctorate	1	0	0
Faculty: Full Time with Masters	4	2	0
Faculty: Part Time with Masters	0	0	4
Faculty: Full Time with Baccalaureate	0	0	0
Faculty: Part Time with Baccalaureate	0	0	0
Teaching / Graduate Assistants			0
Staff: Full Time	8	6	0
Staff: Part Time	1	0	4

Part II. Proposed Program Faculty Profiles

List current faculty within the institution -- with academic qualifications -- to be used in support of the proposed program(s).

	First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.	If "Other," describe
Full Time Faculty							
	David	Anderson	T	MLA	Utah State University	5%	
	Bo	Yang	T	PhD	Texas A&M University	5%	
	Keith	Christensen	T	PhD	Utah State University	40%	
	David	Evans	TT	MUD	University of California Berkeley	5%	
	Ben	George	TT	PhD	Utah State University	5%	
	Todd	Johnson	Other	MLA	Harvard	5%	Instructor
	Caroline	Lavoie	T	MLA	University of Southern California	5%	
	Shujuan	Li	T	PhD	Texas A&M University	5%	
	Carlos	Licon	TT	PhD	Arizona State University	5%	
	Sean	Michael	T	PhD	Virginia Polytechnic University	5%	
	Ole	Sleipness	TT	PhD	Clemson University	5%	
	Barty	Warren-Kretzschmar	TT	PhD	Leibniz University Hannover	5%	
Part Time Faculty							

Part III: New Faculty / Staff Projections for Proposed Program

Indicate the number of faculty / staff to be hired in the first three years of the program, if applicable. Include additional cost for these faculty / staff members in Appendix D.

	# Tenured	# Tenure -Track	# Non -Tenure Track	Academic or Industry Credentials Needed	Est. % of time to be dedicated to proposed program.
Faculty: Full Time with Doctorate					
Faculty: Part Time with Doctorate					
Faculty: Full Time with Masters					
Faculty: Part Time with Masters					
Faculty: Full Time with Baccalaureate					
Faculty: Part Time with Baccalaureate					
Teaching / Graduate Assistants					
Staff: Full Time					
Staff: Part Time					

Appendix D: Projected Program Participation and Finance

Part I.

Project the number of students who will be attracted to the proposed program as well as increased expenses, if any. Include new faculty & staff as described in Appendix C.

Three Year Projection: Program Participation and Department Budget						
	Year Preceding Implementation	New Program				
		Year 1	Year 2	Year 3	Year 4	Year 5
Student Data						
# of Majors in Department	21	24	27	28	28	29
# of Majors in Proposed Program(s)		2	3	4	4	5
# of Graduates from Department	6	7	6	8	10	9
# Graduates in New Program(s)		0	0	0	2	1

Department Financial Data				
	Department Budget			
		Year 1	Year 2	Year 3
Project additional expenses associated with offering new program(s). Account for New Faculty as stated in Appendix C, "Faculty Projections."	Year Preceding Implementation (Base Budget)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)
EXPENSES – nature of additional costs required for proposed program(s)				
List salary benefits for additional faculty/staff each year the positions will be filled. For example, if hiring faculty in year 2, include expense in years 2 and 3. List one-time operating expenses only in the year expended.				
Personnel (Faculty & Staff Salary & Benefits)	$1,243,694	$0	$0	$0
Operating Expenses (equipment, travel, resources)	$27,173	$0	$0	$0
Other:				
TOTAL PROGRAM EXPENSES		$0	$0	$0
TOTAL EXPENSES	$1,270,867	$1,270,867	$1,270,867	$1,270,867
FUNDING – source of funding to cover additional costs generated by proposed program(s)				
Describe internal reallocation using Narrative 1 on the following page. Describe new sources of funding using Narrative 2.				
Internal Reallocation				
Appropriation	$1,270,867			
Special Legislative Appropriation				
Grants and Contracts				
Special Fees				
Tuition				
Differential Tuition (requires Regents approval)	$0	$1,180	$1,770	$2,360
PROPOSED PROGRAM FUNDING		$1,180	$1,770	$2,360
TOTAL DEPARTMENT FUNDING	$1,270,867	$1,272,047	$1,272,637	$1,273,227
Difference				
Funding - Expense	$0	$1,180	$1,770	$2,360

Part II: Expense explanation

Expense Narrative

Describe expenses associated with the proposed program.

Budgets in other programs will not be impacted. Many of the classes taught in this program are already being offered in existing programs and there is verified capacity for additional students. Although faculty engaged in the Landscape Architecture PhD program may have additional advisees, this load will be spread out over multiple faculty members with little or no implications for budgets. The additional courses, representing applied learning (7800 series), professional product experiences (7900 series), dissertation research advising (7970), will be added for this program but these courses will be incorporated into teaching loads of existing faculty. These new courses (applied learning, professional product, and dissertation research) represent faculty mentoring; not classroom instruction. One new seminar course will be added, LAEP 7800 Introduction to the Professoriate (1 credit), but will be incorporated into the teaching loads of existing faculty as well.

Part III: Describe funding sources

Revenue Narrative 1

Describe what internal reallocations, if applicable, are available and any impact to existing programs or services.

The Landscape Architecture PhD program will utilize existing faculty and courses at USU. No additional funding is required for this program. No reallocation of funds will be needed to support this program. The Landscape Architecture PhD program will generate new differential tuition.

Revenue Narrative 2

Describe new funding sources and plans to acquire the funds.

Cover/Signature Page – Full Template

Institution Submitting Request: Utah State University
Proposed Title: Bachelor of Science Degree in Technology Systems
School or Division or Location: College of Agriculture and Applied Sciences
Department(s) or Area(s) Location: School of Applied Sciences, Technology and Education
Recommended Classification of Instructional Programs (CIP) Code[1] : 15.1501
Proposed Beginning Date: Fall 2017
Institutional Board of Trustees' Approval Date:

Proposal Type (check all that apply):

Regents' Agenda Items		
R401-4 and R401-5 Approval by Committee of the Whole		
SECTION NO.		ITEM
4.1.1	☐	(AAS) Associate of Applied Science Degree
4.1.2	☐	(AA) Associate of Arts Degree
	☐	(AS) Associate of Science Degree
4.1.3	☐	Specialized Associate Degree
4.1.4	☒	Baccalaureate Degree
4.1.5	☐	K-12 School Personnel Programs
4.1.6	☐	Master's Degree
4.1.7	☐	Doctoral Degree
5.2.2	☐	(CER C) Certificate of Completion
5.2.4	☐	Fast Tracked Certificate

Chief Academic Officer (or Designee) Signature:
I certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

_____
Signature Date:

Printed Name:

[1] CIP codes must be recommended by the submitting institution. For CIP code classifications, please see http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55.

Utah System of Higher Education
Program Description – Full Template

Section I: The Request

Utah State University requests approval to offer a Bachelor of Science Degree in Technology Systems effective Fall 2017.

Section II: Program Proposal

Program Description

The School of Applied Sciences, Technology, and Education (ASTE) at Utah State University (USU) is developing a Technology Systems degree to begin Fall 2017, if approved. This degree is a standalone degree, but it is also designed to "stack" onto the existing AAS degree in General Technology. The degree will have four emphasis areas: Information and Computer Technology; Technical Management; Robotics, Automation, and Controls; and Product Development. The program will be available through distance learning at all USU campuses.

Consistency with Institutional Mission

The mission of Utah State University is to be one of the nation's premier student-centered land-grant and space-grant universities by fostering the principle that academics come first, by cultivating diversity of thought and culture, and by serving the public through learning, discovery, and engagement.

The new Bachelor of Science degree in Technology Systems reflects the University mission and goals by:

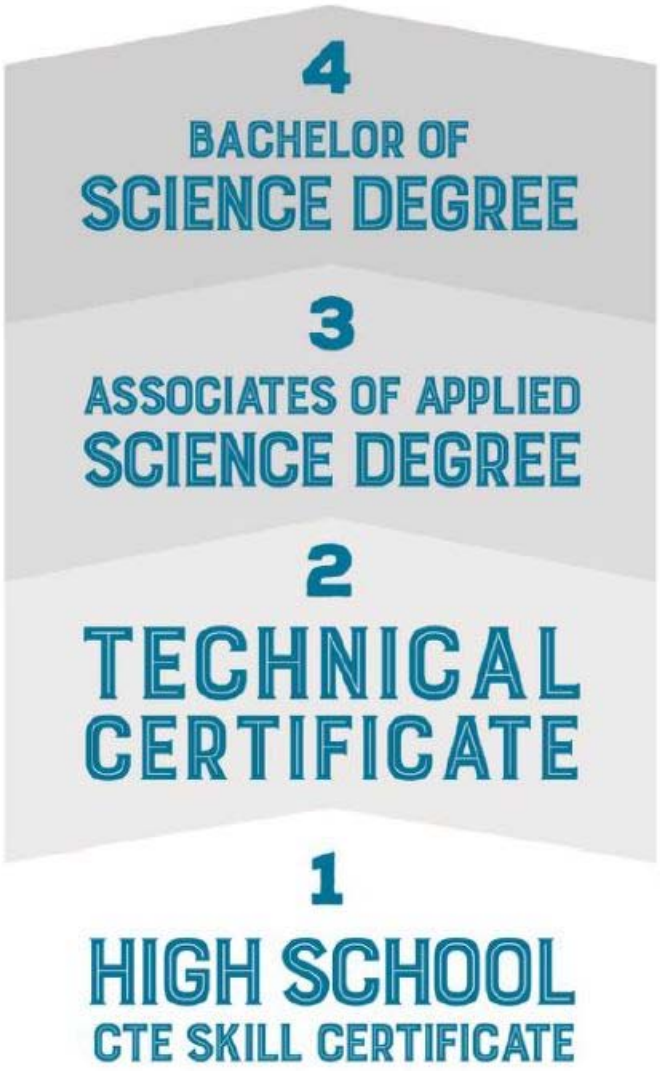
- Offering a program that is current and directed to the needs of the students to further their education
- Providing learning, discovery, and engagement opportunities directly relating to the students' talents, skills and career objectives
- Encouraging interdisciplinary opportunities with course content focusing on technology, product development, management, business and entrepreneurship skills and applied technology experiences. Students will have opportunities to participate in industry-related internships
- Encouraging the formation of new partnerships with local and regional industries
- Serving as a catalyst for business and industry innovation
- Supporting the regional campuses with online courses for training and other special programs

Section III: Needs Assessment

Program Rationale

The B.S. degree in Technology Systems is a culminating effort to address stackable credentials to assist economic growth in the Bear River Region. This effort has been guided heavily by direct input from the Bear River Region Committee of the Utah State Board of Education's Career and Technical Education department. The input from the secondary career and technical education directors in the region, coupled with the input from the Bridgerland Applied Technology College, provides the underpinnings of this degree. Regents Policy R473 "Standards for Granting Academic Credit for CTE Course Work Completed in Non-Credit Instructional Formats" was approved on February 4, 2011. From this mandate, Utah State University created the AAS in General Technology. Since the creation of the degree program, Utah State University has been working closely with industry in our region to support the AAS degree in General Technology and

provide opportunities for development of their workforce, culminating in a B.S. degree. Through these efforts, advisors from regional industry partners have expressed a need for further education beyond the AAS. Students who have completed the AAS degree have indicated a desire to further their education without redundancy and remediation. This degree will service a pipeline of students interested in robotics; information and computer technology; product development; and technical management. This will increase the number of trained professionals for the workforce demands in Northern Utah, and throughout the state, by creating stackable credential training opportunities.



The proposed Bachelor of Science Degree in Technology Systems fills a need of the local industry for this type of graduate. For example, the Human Resources director at Autoliv indicated that the local automated manufacturing industry actively recruits students from Indiana State University and a few schools in California. They have had retention issues with workers from out of state and would like to be able to hire local graduates with the right degree. It will also provide an opportunity for individuals in industrial settings who have completed a one-year certificate and/or an AAS degree and are now seeking opportunities to promote their career advancement.

Labor Market Demand

An advisory committee was created to explore the potential for this degree program consisting of Autoliv, Post Brands, Orbital ATK and Autonomous Solutions. These and additional employers have committed to offer tuition reimbursement for employees willing to obtain this BS degree. Their commitment comes from the demand for additional skilled workers rather than recruiting out of state students to come to Utah to work.

According to the Department of Workforce Services, the projected job growth for fields related to the five emphasis areas of this degree will increase for the next 10 years. For example, the annual average projected number of workers needed for the computer and information technology fields in the Bear River Region is 1,490 with an annual median wage of $52,737 and a 2.3% annual percent increase. The Workforce Services data for the remaining degree areas can be seen in the chart below. This information demonstrates the need for graduates from this type of degree in Utah.

Utah's Projected Demand for Occupations Related to USU's Technology Systems Degree program							
Emphasis Area	**SOC Title**	**2014 Emp**	**2024 Proj Emp**	**Annual Growth %**	**Projected Annual Openings**	**Inexperienced Annual Wage**	**Median Annual Wage**
Robotics, Automation, and Control	Computer-Controlled Machine Tool Operators, Metal and Plastic	1,150	1,650	4.4%	80	$26,620	$34,860
	CNC Machine Tool Programmers, Metal and Plastic	180	260	4.4%	10	$38,700	$52,670
	Aerospace Engineering and Operations Technicians	90	130	3.7%	10	$52,870	$61,000
	Electrical and Electronics Engineering Technicians	1,480	1,760	1.9%	70	$37,660	$58,410
	Electro-Mechanical Technicians	190	240	2.8%	10	$35,790	$54,950
	Industrial Engineering Technicians	700	880	2.6%	30	$36,320	$53,550
	Mechanical Engineering Technicians	420	540	2.8%	20	$34,530	$48,710
	Engineering Technicians, Except Drafters, All Other	780	1,000	2.8%	40	$26,760	$45,870
Technical Management	Industrial Production Managers	1,870	2,250	2.1%	90	$57,280	$89,840
	Transportation, Storage, and Distribution Managers	1,280	1,670	3.0%	70	$49,900	$77,440
	Industrial Production Managers	1,870	2,250	2.1%	90	$57,280	$89,840
	Managers, All Other	5,460	6,850	2.5%	260	$52,480	$91,640
	Architectural and Engineering Managers	1,650	2,070	2.6%	90	$74,190	$113,190
Product Design	Electrical and Electronics Drafters	190	210	1.4%	1 - 5	$36,280	$60,300
	Commercial and Industrial Designers	280	360	2.6%	10	$32,260	$49,560
	Graphic Designers	3,120	4,040	2.9%	170	$28,580	$44,220

Source: Utah Department of Workforce Services Occupational Projections (2014 - 2024) - *http://jobs.utah.gov/wi/pubs/outlooks/state/index.html*

Student Demand

This degree offers a cohesive pathway, starting in high school to a BS degree, which allow students to take steps in their employment in these industries. For example, in the Northern Utah region, high school students attend an ATC and can obtain a 900 hour certificate before graduation. Also in Cache, Box Elder, and Rich counties, the school districts have partnered with BATC to provide STEM programs that have more than 120 students currently enrolled who would be prepared/qualified to enter this degree program once it becomes available. Upon completion of their ATC certificate, students can then become employed within the region and may receive tuition reimbursement as they move forward with the AAS degree then this BS degree.

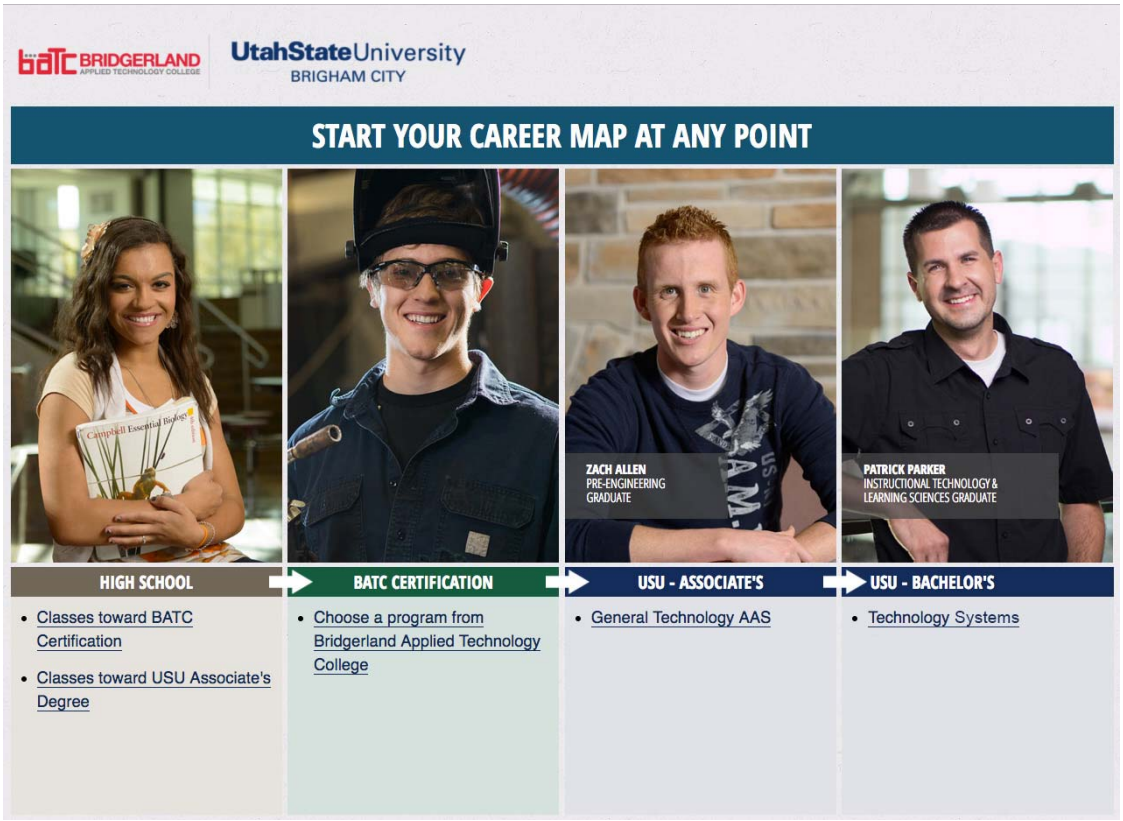
The table below shows students that are currently advancing in the AAS General Technology degree program. As shown, there has been a steady increase in the number of students enrolled in the AAS degree program. This degree program offers them a way to further their education.

AAS Degree Enrollment and Graduation Numbers

	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
Total Enrollments	3	7	15	19	27
Total Graduates	3	4	5	7	-

This degree also provides an outlet for students that have started other technical degrees at USU and are looking for an alternative degree pathway that utilizes, and highlights, their technical experience and skills. For example, a student who is not accepted in the junior and senior year of the Outdoor Product Design

and Development degree program can apply their credits into a degree in Technology System emphasizing Product Development.



Similar Programs

This program does not exist in USU's service region. Currently, the association that offers national accreditation, the Association of Technology, Management, and Applied Engineering (ATMAE), does not accredit any similar programs in the state. Utah Valley University has been identified as having a similar "stacking" degree for Technology Management. UVU also offers a BS degree in Mechatronics, a similar degree to the proposed Robotics, Automation, and Controls emphasis area. The development focus within this planning effort has been in the Bear River Region.

Efforts are being made to collaborate with these similar programs in the state.

External Review and Accreditation

An advisory board with industry leaders in Northern Utah from Autoliv, Post Brands, and ATK have reviewed the degree plan proposal and support this program. Additional advisory members will be added as the need arises.

Nationally, the Association of Technology Management and Applied Engineering offers accreditation for programs similar to this proposal. This program has been designed to meet their standards and once the program is in place, accreditation will be investigated, with an initial projected review after five years. According to the ATMAE website, the average cost of initial accreditation visit fee is $5000.

Collaboration with and Impact on Other USHE Institutions

This program will not conflict with other institutions since this program is not offered in the Northern Utah region. This program has the potential and capacity to build upon existing programs offered at USU-Eastern (Price and Blanding campuses), and through the Regional Campus network to extend this program primarily into rural areas of Utah that are within USU's service region.

Section IV: Program Details

Graduation Standards and Number of Credits

The proposed program aligns with the standards and number of credits of other programs granting the Bachelors of Science degree at USU. Upon graduation a student will have earned a minimum of 120 credits including general education, University Studies and major courses.

Admission Requirements

The admission requirements will be consistent with the existing USU undergraduate admission requirements.

Curriculum and Degree Map

The Technology Systems major is designed as a stackable degree program culminating with four emphasis areas: Information and Computer Technology; Technical Management; Robotics, Automation, and Controls; and Product Development. Degree maps for the program are shown in Appendix A.

Section V: Institution, Faculty, and Staff Support

Institutional Readiness

This degree program is designed to "stack" onto the Associates of Applied Science in General Technology that is already in place within ASTE. As such, the number of additional courses the students would be required to complete is significantly less than a traditional four-year degree. This degree program is a collaboration between multiple colleges and schools within the university. The majority of required courses are already established and offered. Only a few courses will need to be developed or restructured within ASTE to offer the Technology Systems degree. The program is designed to allow students to take courses distance/online via the already established system at USU, and will not affect other course offerings or delivery methods of undergraduate education.

Faculty

The courses draw on strengths and expertise of the faculty in the School of Applied Sciences, Technology and Education along with collaboration from the Bridgerland Applied Technology College that provides technical content training for students within the AAS in General Technology. Additional courses offered in programs outside the department, (e.g., the Huntsman School of Business) will be applied to this degree with minimal student impact. Through restructuring and reallocation of teaching assignments, the faculty can accommodate the student demand of the proposed program while requiring only one additional faculty member. The position for the faculty member has already been funded through the SB103 collaborative

partnership with the Bridgerland Applied Technology College. Additional faculty will be considered as the enrollment in the program grows or industry partners sponsors such additions.

Staff
With little restructuring, current staff resources are sufficient for the needs of this new program. As the program grows or industry partners sponsor such additions, additional staff will be considered.

Student Advisement
The School of Applied Sciences, Technology and Education has designated advisors throughout the regional campus system and within the College of Agriculture and Applied Sciences. The advisors for this program will be the same individuals who also advise students in the AAS General Technology program. If needed, student peer mentors will assist the advisors with the increased number of students and additional advising capacity will be added as student numbers warrant within ASTE.

Library and Information Resources
Additional resources will not be needed. USU's current undergraduate resources include all software needed for this degree program.

Projected Enrollment and Finance
See Appendix D

Section VI: Program Evaluation

Program Assessment
The School of Applied Sciences, Technology and Education will conduct on-going assessment of the degree program and make improvements or adjustments as needed. The objectives selected for this program include skills and knowledge identified by industry leaders.

This program has four primary objectives. After completion of this degree program, students will be able to:

1. Demonstrate technical knowledge and ability in at least one of the following emphasis areas: Technical Management; Robotics, Automation, and Controls; Product Development; and Information and Computer Technology.
2. Develop computational skills specific to problems and critical issues that exist in one of the emphasis areas.
3. Demonstrate written, verbal and visual communication skills and problem solving skills.
4. Acquire training and develop skills necessary for a career or an advanced degree program.

Instructors will use student course evaluations as a formative step in evaluating the program. The program faculty will have the opportunity to interact and work with other faculty from across campus to seek feedback. The department will also conduct exit interviews/surveys of graduating students and use portfolios and senior projects to evaluate the technical, written, verbal, and communication skills of the students. The program will survey alumni at approximate five-year intervals to provide an opportunity for

student reflection on the program outcomes and overall value. Industry partners will offer internships and provide feedback about the program through an advisory committee.

Student Standards of Performance

The student performance standards have been identified and developed through partnership with industry through an advisory committee. The standards will be evaluated and adapted as industry partners provide feedback.

Core Standards of Performance

- Assess safety concerns in an industrial environment
- Evaluate technology as it relates to society
- Demonstrate technical and professional communication skills
- Demonstrate effective leadership, teamwork, and communication skills
- Apply a design process to an industry related project
- Apply technical concepts related to their emphasis area through an industry related project
- Apply creative design processes and evaluate outcomes

Management and Technical Standards

- Analyze factors affecting human resource management issues, production planning, scheduling, and inventory control relative to business goals and professional development (technical management emphasis)
- Obtain industry certification(s)
    - at least three industrial robotic platforms (robotics, automation, and controls emphasis)
    - at least three ICT related systems/platforms (information and computer technology)
- Explain and apply the basic decision making, production, and creative processes involved in the conversion of materials to finished products (product development and robotics, automation, and controls emphases)
- Apply technical knowledge and skills related to computer hardware and software (information and computer technology emphasis)

Industry partnerships will be used to evaluate and provide feedback of students' learning and performance in an industrial setting. Completion of a senior design project will be evaluated using a common rubric to assess the student standards of performance. Artifacts demonstrating student performance will be included in a portfolio and collected throughout the courses in the program.

Appendix A: Program Curriculum

List all courses, including new courses, to be offered in the proposed program by prefix, number, title, and credit hours (or credit equivalences). Indicate new courses with an X in the appropriate columns. The total number of credit hours should reflect the number of credits required to be awarded the degree.

For variable credits, please enter the minimum value in the table for credit hours. To explain variable credit as well as any additional information, use the narrative box at the end of this appendix.

		Course Number	NEW Course	Course Title	Credit Hours
		General Education Courses (list specific courses if recommended for this program on Degree Map)			
				General Education Credit Hour Sub-Total	30
		Required Courses			
+	-	BUSN2200		Business Communications	3
+	-	BUSN2320		Small Business Management for CTE	3
+	-	TEE2300		Electronics Fundamentals (QI)	4
+	-	TEE3000	☒	Hazard Recognition and Control	3
+	-	ASTE3440		Science, Technology and Modern Society (DSC)	3
+	-	ASTE3050		Technical and Professional Communication Principles (CI)	3
+	-	CMST3250		Organizational Communication (CI)	3
+	-	ASTE4250		Internship**	4
+	-	ASTE4900		Senior Project	3
+	-	ELEC1XXX		ATC 900 hr certificate or USU certificate of completion	30
				Add A Group of Courses	
				Required Course Credit Hour Sub-Total	59
		Elective Courses			
+	-			Choose 4 of the following courses:	
+	-	BUSN2010		Financial Accounting	4
+	-	BUSN2020		Managerial Accounting	4
+	-	BUSN2050		Business Law	4
+	-	BUSN2390		Organizational Behavior	3
+	-	BUSN2590		Business Ethics & Social Responsibility	2
+	-	BUSN2800		Computerized Accouting	2
+	-	BUSN2988		Special Problems (Entrepreneurial Thought)	3
+	-	CMST1020		Public Speaking (BHU)	3
+	-				105
				Add A Group of Courses	
				Elective Credit Hour Sub-Total	16
				Core Curriculum Credit Hour Sub-Total	105

Can students complete this degree without emphases? ☐ *Yes or* ☒ *No*

Course Number	NEW Course	Course Title	Credit Hours
Name of Emphasis:		Robotics, Automation, and Controls	
BCIS1000	☐	Introduction to Computer Science	3
TEE2400	☐	Industrial Networking**	3
TEE3380	☐	Advanced PLC**	3
TEE3390	☐	HMI**	3
TEE3370	☒	Industrial Robotics	3
		Add A Group of Courses	
		Emphasis Credit Hour Sub-Total	15
		Total Number of Credits to Complete Program	120

Course Number	NEW Course	Course Title	Credit Hours
Name of Emphasis:		Information and Computer Technology	
TEE3400	☐	Computer Automation**	3
TEE3710	☐	Advanced Hardware**	3
TEE3510	☐	Advanced Server Administration**	3
TEE4710	☐	Security and Digital Forensics**	3
TEE3050	☐	Network Administration**	3
		Add A Group of Courses	
		Emphasis Credit Hour Sub-Total	15
		Total Number of Credits to Complete Program	120

Course Number	NEW Course	Course Title	Credit Hours
Name of Emphasis:		Product Development	
TEE2230	☐	Advanced Materials and Processing Systems	3
TEE2020	☐	Computer-Integrated Manufacturing Systems	3
FCSE4040	☐	Advanced Clothing Studies: Couture & Tailoring Skills	3
OPDD4420	☐	Digital Design Technologies for Outdoor Products I	3
OPDD4430	☐	Digital Design Technologies for Outdoor Products II	3
		Add A Group of Courses	
		Emphasis Credit Hour Sub-Total	15
		Total Number of Credits to Complete Program	120

Course Number	NEW Course	Course Title	Credit Hours
Name of Emphasis:		Technical Management	
MGT3250		Introduction to Human Resource Management	3
MGT3510		New Venture Fundamentals	2
MGT3520		New Venture Management	2
MGT3540		New Venture Financing	2
MGT3700		Operations Management	2
MGT4720		Production Planning and Control	2
		Internship or MGT elective	2
Add Another Emphasis Course			
		Emphasis Credit Hour Sub-Total	15
		Total Number of Credits to Complete Program	120

**This course will be renamed and restructured upon program approval.

Program Curriculum Narrative

Describe any variable credits. You may also include additional curriculum information.

This program is designed to "stack" onto the AAS in General Technology available at USU; however, it can be completed in a traditional method using a current USU certificate of completion. Both the 900+ hour ATC certificate and the USU certificate of completion fulfill 30 technical credits within the degree program.

Degree Map

Degree maps pertain to undergraduate programs ONLY. Provide a degree map for proposed program. Degree Maps were approved by the State Board of Regents on July 17, 2014 as a degree completion measure. Degree maps or graduation plans are a suggested semester-by-semester class schedule that includes prefix, number, title, and semester hours. For more details see http://higheredutah.org/pdf/agendas/201407/TAB%20A%202014-7-18.pdf (Item #3).

Please cut-and-paste the degree map or manually enter the degree map in the table below.

First Year Fall	Cr. Hr.	First Year Spring	Cr. Hr.
Working on 900 hr certificate or equivalent		Working on 900 hr certificate or equivalent	
Add Courses Total		Total	30
Second Year Fall	**Cr. Hr.**	**Second Year Spring**	**Cr. Hr.**
ENGL1010 Introduction to Writing	3	BUSN2320 Small Business Management/CTE	3
MATH1050	3	BUSN2200 Business Communications	3
Breadth Social Science Course	3	Emphasis Area Credit (for AAS)	3
Emphasis Credits (AAS)	3	Breadth Exploration (Gen Ed)	3
Breadth Creative Arts	3	ECN1500 Intro to Economic Institutions	3
Add Courses Total	15	Total	15
Third Year Fall	**Cr. Hr.**	**Third Year Spring**	**Cr. Hr.**
ASTE3050 Technical & Professional Comm.	3	Breadth Humanities	3
Breadth Life Science	3	Breadth Physical Science	3
Emphasis Area Credit (AAS)	3	ENGL2010 Intermediate Writing	3
Emphasis Area Credit (AAS)	3	TEE2300 Electronics Fundamentals	3
Elective Credit (BS)	3	Emphasis Credits (BS)	3
Add Courses Total	15	Total	15

Third Year Fall	Cr. Hr.	Third Year Spring	Cr. Hr.
ASTE3050 Technical & Professional Comm.	3	Breadth Humanities	3
Breadth Life Science	3	Breadth Physical Science	3
Emphasis Area Credit (AAS)	3	ENGL2010 Intermediate Writing	3
Emphasis Area Credit (AAS)	3	TEE2300 Electronics Fundamentals	3
Elective Credit (BS)	3	Emphasis Credits (BS)	3
Add Courses Total	15	Total	15
Fourth Year Fall	**Cr. Hr.**	**Fourth Year Spring**	**Cr. Hr.**
TEE3400 Hazard Recognition and Control	3	ASTE4250 Internship	3
ASTE3440 Science & Tech of Mod Society	3	ASTE4900 Senior Project	3
CMST3250 Organizational Communication	3	Elective Credit (BS)	3
Emphasis Credits	3	Emphasis Credits	3
Emphasis Credits	3	Emphasis Credits	3
Add Courses Total	15	Total	15

Appendix C: Current and New Faculty / Staff Information

Part I. Department Faculty / Staff

Identify # of department faculty / staff (headcount) for the year preceding implementation of proposed program.

	# Tenured	# Tenure -Track	# Non -Tenure Track
Faculty: Full Time with Doctorate	11	5	1
Faculty: Part Time with Doctorate	1		
Faculty: Full Time with Masters	4	1	5
Faculty: Part Time with Masters			
Faculty: Full Time with Baccalaureate	4	3	10
Faculty: Part Time with Baccalaureate			
Teaching / Graduate Assistants			1
Staff: Full Time			11
Staff: Part Time			7

Part II. Proposed Program Faculty Profiles

List current faculty within the institution -- with academic qualifications -- to be used in support of the proposed program(s).

	First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.	If "Other," describe
Full Time Faculty							
	Tracy	Blake	Other	PhD	Arizona State University	50%	
	Curis	Frazier	Other	M.S.	Utah State University	50%	
	Dennis	Garner	Other	M.S.	Brigham Young University	30%	
	Bruce	Miller	T	PhD	Iowa State University	10%	
	Elias	Perez	Other	MAE	Western Governors University	50%	
	Ed	Reeve	T	PhD	Ohio State University	10%	
	Trevor	Robinson	Other	PhD	Utah State University	100%	
	Gary	Stewardson	T	PhD	University of Maryland	10%	
	Steve	Williams	Other	M.S.	Utah State University	100%	
							Add Another Full Time
Part Time Faculty							
							Add Another Part Time

Part III: New Faculty / Staff Projections for Proposed Program

Indicate the number of faculty / staff to be hired in the first three years of the program, if applicable. Include additional cost for these faculty / staff members in Appendix D.

	# Tenured	# Tenure -Track	# Non -Tenure Track	Academic or Industry Credentials Needed	Est. % of time to be dedicated to proposed program.
Faculty: Full Time with Doctorate					
Faculty: Part Time with Doctorate					
Faculty: Full Time with Masters		1		M.S. – Information Systems	100%
Faculty: Part Time with Masters					
Faculty: Full Time with Baccalaureate					
Faculty: Part Time with Baccalaureate					
Teaching / Graduate Assistants					
Staff: Full Time					
Staff: Part Time			1	B.S. - Advisor	25%

Appendix D: Projected Program Participation and Finance

Part I.

Project the number of students who will be attracted to the proposed program as well as increased expenses, if any. Include new faculty & staff as described in Appendix C.

Three Year Projection: Program Participation and Department Budget						
	Year Preceding Implementation	New Program				
		Year 1	Year 2	Year 3	Year 4	Year 5
Student Data						
# of Majors in Department	953	963	973	988	1,003	1,023
# of Majors in Proposed Program(s)		10	20	35	50	70
# of Graduates from Department	154	164	174	189	204	224
# Graduates in New Program(s)		0	5	10	15	20
Department Financial Data						
	Department Budget					
	Year Preceding Implementation (Base Budget)	Year 1 Addition to Base Budget for New Program(s)	Year 2 Addition to Base Budget for New Program(s)	Year 3 Addition to Base Budget for New Program(s)		
Project additional expenses associated with offering new program(s). Account for New Faculty as stated in Appendix C, "Faculty Projections."						
EXPENSES – nature of additional costs required for proposed program(s)						
List salary benefits for additional faculty/staff each year the positions will be filled. For example, if hiring faculty in year 2, include expense in years 2 and 3. List one-time operating expenses only in the year expended.						
Personnel (Faculty & Staff Salary & Benefits)	$2,041,467	$90,000	$105,000	$105,000		
Operating Expenses (equipment, travel, resources)	$121,333	$5,000	$5,000	$5,000		
Other:						
TOTAL PROGRAM EXPENSES		$95,000	$110,000	$110,000		
TOTAL EXPENSES	$2,162,800	$2,257,800	$2,272,800	$2,272,800		
FUNDING – source of funding to cover additional costs generated by proposed program(s)						
Describe internal reallocation using Narrative 1 on the following page. Describe new sources of funding using Narrative 2.						
Internal Reallocation		$95,000	$110,000	$110,000		
Appropriation						
Special Legislative Appropriation						
Grants and Contracts						
Special Fees						
Tuition						
Differential Tuition (requires Regents approval)						
PROPOSED PROGRAM FUNDING		$95,000	$110,000	$110,000		
TOTAL DEPARTMENT FUNDING	$0	$95,000	$110,000	$110,000		
Difference						
Funding - Expense	($2,162,800)	($2,162,800)	($2,162,800)	($2,162,800)		

Part II: Expense explanation

Expense Narrative

Describe expenses associated with the proposed program.

One new faculty member will be added to the technology faculty with expertise linked to information technology. We anticipate the position at the Brigham City regional campus. Additional advising capacity will be needed beginning in Year 2 as ASTE advisors are nearing full capacity currently. We also anticipate an incremental operating cost associated with a new program, faculty and staff additions.

Part III: Describe funding sources

Revenue Narrative 1

Describe what internal reallocations, if applicable, are available and any impact to existing programs or services.

ASTE has no additional revenue streams that have been committed to this program. The primary revenue that can be directed towards this program will come through funding generated internally based upon the SCH return. The faculty member has been funded at the Brigham City campus to focus upon Information Technology. The program/content focus of this individual will support this degree program as well.

Revenue Narrative 2

Describe new funding sources and plans to acquire the funds.